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# THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. I.—7TH YEAR.

SYDNEY: SATURDAY, JUNE 5, 1920.

No. 23.

## SOME CONSIDERATIONS OF ENTERIC INFECTIONS.<sup>1</sup>

By F. Blois Lawton, O.B.E., M.B., Ch.B. (Melb.),  
M.R.C.P. (London),

Honorary Physician to Out-Patients, Melbourne Hospital.

I wish to express my thanks for the honour of being asked to read a paper before this Branch.

This subject was chosen because it is always of interest and because of the apparent prevalence of the disease this year.

Though statistics show a gratifying decrease in the incidence of enteric fever, both in this State and in the Commonwealth, from 1894 to 1918, there are still many cases to be seen every year in the metropolitan hospitals. In the year 1890-1894 there were in Victoria 253.9 cases per 100,000 of the population, with a death-rate of 13.0%, while in 1918 there were 25.0 cases per 100,000 and the death-rate was again 13%, though in the intervening years the death-rate was a little lower. The death-rate for Victoria is only about half that for the Commonwealth.

Since many patients come to the metropolitan hospitals from the country, we are liable to get a false impression of the prevalence of the disease, and when the statistics for this year have been collected it may be found that the disease is not more prevalent than usual. The number of cases of enteric infections in the Melbourne Hospital during the year which ended on June 30, 1918, was 28, while in the following year there were 13 and in the year beginning on July 1, 1919, 42 cases have been under treatment and two months of this year remain.

Though the last figures may not indicate an increase in the incidence of enteric fever in the State, the disease is still too prevalent and I hope that I shall provoke a discussion which will draw attention to the necessity of employing additional measures to reduce the incidence of the disease and its mortality.

The ætiology of enterica does not seem to call for general consideration, but certain aspects require particular attention.

As is well known, the infecting agent may be the *B. typhosus* or the *B. paratyphosus A* or *B* and lately a *B. paratyphosus C* has also been described by Ledingham. The existence of this, as well as possibly other organisms allied to it, has been suspected for some time.

Though paratyphoid infections seem to be uncommon here, they do occur, and it is probable that they may become more frequent, for it is quite likely that there are in this State some "carriers" who have escaped detection after paratyphoid contracted in other countries. It should also be remembered that, since paratyphoid exists in other countries, it may be brought here at any time.

The bacilli of the enterica group may be able to live in soil for prolonged periods, but their power to do so has not been proved and it is much more

probable that the outbreaks which occur in various places from time to time, are due to the recent presence of a "carrier" or "carriers."

In connexion with the question of "carriers," it is of interest that the son of a patient admitted to the Melbourne Hospital this year, who belonged to a group of patients from a small community in the country, had enteric fever twelve months before his mother was affected. Another point of interest about that boy is that he was admitted to hospital with a diagnosis of epidemic jaundice.

It is important to remember that in "carriers" the seat of infection is sometimes the throat.

It is unnecessary to detail the ordinary symptoms of typical cases of typhoid fever, but in some cases of typhoid and in many cases of paratyphoid infection the symptoms are often atypical and some of them merit description. It is well known, of course, that in those who have received prophylactic inoculations, all enterica infections may produce irregular symptoms and abortive types of the disease are not uncommon, but abortive types of typhoid and paratyphoid also occur apart from inoculation.

In the last few years enterica infections have been studied very largely in persons who have been inoculated either with typhoid vaccine or with a mixed typhoid and paratyphoid vaccine and this probably caused some modification in the symptoms, as well as producing so often the highly atypical cases.

Prophylactic inoculation is not practised to any extent here, but in a few of those who were inoculated two years ago, the effects may possibly have persisted and from this cause atypical cases may still arise, but they would certainly be very rare.

The onset in paratyphoid may be similar to that of typical cases of typhoid, but very often it is more abrupt and often there is a rigor or less severe shivering.

In any case the rise of temperature is more rapid and generally reaches its maximum within 48 hours; during the course of the disease the temperature is less regular.

In addition, shivers are very much more common during the course of the illness.

Sweating in the course of the illness is also more common in paratyphoid.

Another common type of onset is with symptoms of acute gastro-enteritis and this type is liable to escape recognition, unless bacteriological examinations are made.

An outbreak of this form occurred in America and the symptoms were thought to be due to food poisoning, but bacteriological examination demonstrated the presence of *B. paratyphosus B* in the stools of those affected.

In others the onset is with dysenteric symptoms, the stools containing blood and mucus. Quite commonly symptoms of cholecystitis, with or without jaundice, are found.

The illness may begin with symptoms suggestive of pneumonia or appendicitis, but these symptoms are

<sup>1</sup> Read at a Meeting of the Victorian Branch of the British Medical Association on May 5, 1920.



found, too, in the early days of true typhoid. In another form there is a striking resemblance, not only in the onset, but also in the course and duration, to influenza and when influenza is prevalent it is probable that such cases of paratyphoid may be missed. In these cases the period of pyrexia may be only four or five days.

In a few cases joint pains occur at the onset and may cause difficulty in diagnosis.

Diarrhoea occurs frequently at the onset in cases other than those presenting severe dysenteric symptoms or acute gastro-enteritis.

The diarrhoea does not persist for long and gives place to constipation.

In paratyphoid the pulse is slow compared with the temperature and this is even more marked than in typhoid.

Bradycardia, without symptoms, may persist for some time after the illness, but often in convalescence tachycardia occurs, usually with symptoms.

The other symptoms at the onset are similar to those of typhoid, but they are generally less severe. The patient usually has a dull, heavy appearance in the early stages, but this is often lost, even before the temperature falls. Commonly patients with paratyphoid do not look so ill as those with typhoid.

The abdomen may present a normal appearance, but there is generally some fullness, as in typhoid. The spleen is, as a rule, enlarged and the enlargement is often greater than in typhoid; when the spleen cannot be felt, there may be tenderness under the left costal margin. Enlargement of the spleen is the most valuable single physical sign. Abdominal pain and vomiting may occur in the course of the illness.

Spots usually appear from the sixth to the tenth day, but their appearance may be delayed even to the third week and so none may be seen till the temperature has been normal for some time.

They are larger, more irregular, more raised and darker in colour than in typhoid and very profuse.

The duration of the illness is less than in typhoid, as a rule, but in some cases it may be long.

Severe toxic symptoms are infrequent, but relapses may occur and in some epidemics there have been relapses in as many as 10% of the cases.

The complications are similar to those of typhoid, but hæmorrhage and perforation are less common. Suppurative processes are frequent after paratyphoid infections.

A notable feature of paratyphoid infections is the frequency with which lesions of the large bowel are found.

Cases of chronic enterica in which the illness has lasted several months, have been described.

When typical cases of typhoid are encountered, the diagnosis does not offer many difficulties, but atypical cases are always liable to be met and paratyphoid in any of its varieties may be found.

When the symptoms and clinical features suggest the possibility of typhoid, investigations are at once made, but the atypical cases are difficult to diagnose and in any case of pyrexia which is not obviously due to something else, efforts should be made to exclude enterica. An early diagnosis is of the greatest

importance, in order that prophylactic measures, as well as treatment, may be undertaken.

After a thorough physical examination the first proceeding is to do a leucocyte count, for a leucopenia is almost the rule in all enterica infections and though a leucocytosis does not exclude enterica, it goes far towards doing so.

A blood culture is of the utmost importance and it should be made during the first week, as after that there will be little chance of obtaining a growth.

If the blood culture be negative, cultures should be made from the stools and urine. The culture from the stool should also be made early, while diarrhoea is present, in order to have a good chance of obtaining a growth. If all these are negative, agglutination tests should be done, but often specific agglutinins do not appear in sufficient quantity to give a reaction for a fortnight, so this method is not very satisfactory.

In those who have had prophylactic inoculations, there are difficulties in making a diagnosis, and it is only by carrying out a series of observations that a definite conclusion can be reached. The reaction may be influenced by other febrile affections.

Another test which may be of assistance is the diazo reaction.

The simultaneous intra-dermal injection of vaccines of *B. typhosus*, *B. paratyphosus A* and *B. paratyphosus B* in three different places has recently been recommended as an aid to diagnosis. If the patient has an infection caused by one of these organisms, a red papule may appear at the site of its injection within 48 hours. Positive results were obtained in 73.3% of cases. The reaction is negative in normal people, but after inoculation these papules may appear.

The atropine test, introduced by Marris, is of doubtful value.

The only absolute evidence of infection by an organism of the enterica group is the recovery of that organism from the patient.

Though a diagnosis of infection by some member of the enteric group may be made, it is often impossible to make a diagnosis on clinical grounds between typhoid and paratyphoid A and B.

The diagnosis of enteric infections bristles with difficulties and the similarity of the symptoms in the early stages to those found in the early stages of other infective conditions makes it essential to carry out thorough investigations as soon as possible when the slightest suspicion exists.

This is now even more essential than it was a few years ago, since many of these conditions, once rare here, are likely to be encountered more frequently.

Malaria is an example. In the early stages enterica infections are likely to be mistaken for malaria and malaria sometimes, both at the onset and during its course, may resemble enteric.

The figures already quoted seem to indicate that there has been little advance in treatment during the last thirty years. One alteration that has been made in the treatment of paratyphoid is an increase in diet and this has met with great success.

Various drugs are recommended, but the results of their use have not been very satisfactory.



Owing to the prevalence of pyelitis and cholecystitis, hexamine is recommended and some observers consider it to be of value.

Others report good results from methylene blue. Vaccines have been used frequently and by some they are thought to be valuable, but others are doubtful of their value. Perhaps modifications in the methods of using them might result in uniformly better results.

Intravenous protein medication is being used at the present time and appears to be of value. The use of a specific serum has also in some cases apparently been attended with success. It would be interesting to hear the opinion of members who have had experience in the use of this form of treatment.

Prophylaxis requires, first, the early recognition and isolation of all patients with enteric infection and the disinfection of all excreta and other infected material. Secondly, all patients, before being discharged from hospital, should give at least three negative cultures from their stools and urine at intervals of seven days. This is but a feeble attempt to detect "carriers," for a "carrier" may give numerous negative results and later a positive one, though a positive may not be obtained for weeks.

If a "carrier" be detected in this manner, it is very difficult to deal with him, for it may be impossible to detain him till he is free from infection.

It appears that all one can do is to instruct him how best to avoid infecting others, to prevent his employment in connexion with food and to protect his immediate neighbours by inoculation.

When a case of enterica occurs, in addition to the methods at present in use for the prevention of the spread of infection, investigations should be made to determine whether the cause of the outbreak is a "carrier."

The suggestion that "carriers" should be looked for implies the employment of bacteriologists and, if we are to meet with success in diminishing the incidence of enterica, it is essential that bacteriologists be available.

When a case occurs in any community all those likely to be infected should be inoculated and, further, in any district where enteric occurs frequently, prophylactic inoculation should be carried out every year. General inoculation seems to be the most promising measure to diminish the incidence of enteric infections and also to diminish the mortality.

There are difficulties in the way of employing inoculation as a prophylactic measure with any degree of success. Compulsory inoculation, at any rate in centres where enterica is prevalent, is advisable, but it would undoubtedly be unacceptable to many people. Inoculation on a voluntary basis would certainly be useful, but unless a large proportion of the population in any centre was inoculation, the results could not be expected to be very good.

In localities where enteric occurs year after year, the reduction in the incidence and mortality which would surely follow prophylactic inoculation, more or less generally employed, would soon influence the public, not only in those localities, but also in others, if the results were frequently published. With prophylactic inoculation there must be constant efforts to improve sanitation.

With prophylactic inoculation carried out on a voluntary basis at Georgetown, in the West Indies, where enteric is prevalent, the results were not good, but the proportion of the population inoculated was small. It was concluded that inoculation on a voluntary basis is not to be depended on as a method of prevention of the spread of enteric in the tropics, unless a number in the neighbourhood of 10% of the population submits.

That prophylactic inoculation is of very great value in reducing both the incidence and the mortality is shown by the results obtained in the war.

I was unable to find statistics covering the later years, but some covering the earlier years are of value. In Gallipoli, where the conditions were certainly not unfavourable for the spread of all types of enteric and where the troops had been inoculated against typhoid only, the number of cases of paratyphoid was large, while there were few cases of typhoid.

The figures of Martin and Upjohn covering the period to the middle of December, 1915, show 5,700 cases of enteric and of these 93% were paratyphoid and only 7% were typhoid.

In Egypt and Gallipoli to the end of December, 1915, typhoid was responsible for less than 0.5% of the medical casualties.

In the British Expeditionary Force from the beginning of the war to May 1, 1915, the following figures show the comparative immunity of the inoculated:—

	Inoculated.	Uninoculated.
Number of Cases .. .. .	494	558
Number of Deaths .. .. .	33	113
Percentage Mortality .. .. .	6.7	20.2

Between May and September 19, 1915, when over 90% were inoculated, the following result was obtained:—

	Inoculated.	Uninoculated.
Number of Cases .. .. .	195	77
Number of Deaths .. .. .	13	13
Percentage Mortality .. .. .	6.7	17.0

It may be well to quote also the results obtained among civilians. This was in one epidemic in Hawaii in 1917:—

	Number.	Cases.	Rate per 1,000 Mortality.
Vaccinated Persons .. .. .	4,087	13.45	0.97
Unvaccinated Persons .. .. .	812	55.41	8.62

These figures indicate that inoculation is a powerful ally in attempts to reduce the incidence and mortality of enteric.

The statistics previously quoted show that there is scope for improvement here and more far-reaching methods than those at present employed should be introduced.

#### A MODIFICATION OF THE BENZIDINE TEST FOR OCCULT BLOOD.

By Sydney Pern, M.R.C.S., L.R.C.P.,  
Melbourne.

Take a thin smear of faeces on a microscopic slide, add two or three drops of glacial acetic acid, spread evenly with a wooden match, and warm over a match or spirit lamp. Then add a drop or two of benzidine

dissolved in alcohol; this solution will keep at least for a couple of weeks. Finally, add a drop or two of peroxide of hydrogen. Almost immediately a dark blue will appear. Needless to say, precaution must be taken in avoiding iron or red meats previous to the test being done, as it is remarkably sensitive.

The claim is that it is done very rapidly and that it is far simpler to perform than the usual test—tube test—and one can make no errors in doing it.

#### UNUSUAL MID-TARSAL DISLOCATION.

By J. G. Edwards, M.B., Ch.M. (Sydney),  
Honorary Assistant Skiagrapher, Sydney Hospital.

The accompanying skiagram shows a dorsal dislocation of the anterior end of the talus. This is an extremely rare condition and was caused by a fall from a height, the patient landing on the feet.

#### ON HEART IRREGULARITIES.

By J. Macdonald Gill,  
M.D. (Lond.),

Honorary Physician,  
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Honorary Physician,  
Royal Alexandra  
Hospital for Children,  
Camperdown; Lecturer on Clinical  
Medicine, University  
of Sydney.

#### Introduction.

Although the classification of heart irregularities we owe to Mackenzie is satisfactory and an immense advance in clinical medicine, yet the actual way in which these arrhythmias are produced is still very uncertain. My object in this paper is to discuss their mechanism and incidentally their relation to heart failure. We will take "sinus irregularity" first.

#### Sinus Arrhythmia.

The term is unfortunate, as the sinus cannot take any essential part in its aetiology. I prefer the term Mackenzie first used when he described it, *viz.*, "the youthful type of irregularity"; a phrase which leaves the origin open. It occurs almost solely in children and is the only type of irregularity that is common in childhood. Mackenzie puts it down to vagus action, being guided by the apparent influence which respiration has in producing it. It is most marked in the slow pulses after fevers, as typhoid. It first makes its appearance in childhood from about the age of six to the age of twelve years, when the pulse is slowing down from the rapid rate of early childhood to the normal rate of the adult. It generally disappears

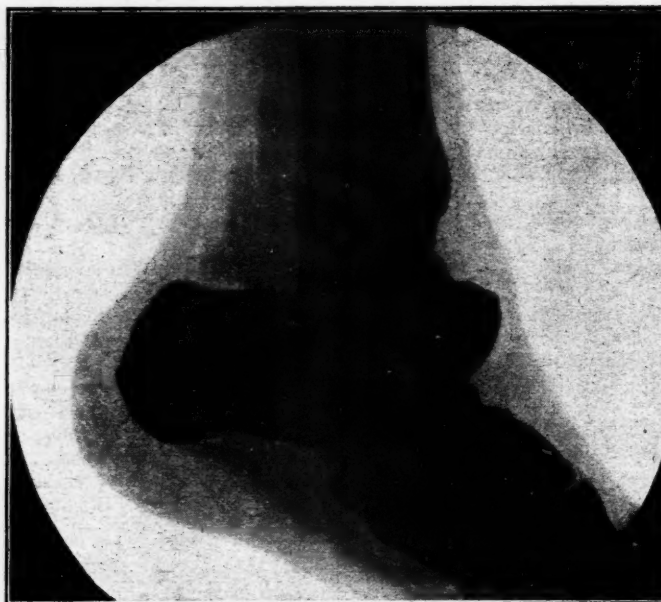
about adolescence, but may occasionally be observed up to about 25. After that it is very rarely observed. I do not think that respiration has much to do with its production. As a rule, no connexion can be observed between it and respiration; moreover, it would be more frequent. I think the simple explanation that it is a peculiarity of childhood and youth is quite sufficient. Other functions in childhood are apt to be unstable and irregular, *e.g.*, the respiration. From the practical point of view, it is important that every medical man should know that it is not a pathological, but a physiological form of irregularity.

#### Extra Systole.

The next form of irregularity to consider is the extra systole. This form is very rare in childhood. It only begins to be common in the advancing years of life. It is quite common in old age. It is also

common in youthful adults suffering from the various forms of rheumatic heart disease. In fact, occasionally it is the only sign that the heart is affected by rheumatism. While it is of very little clinical significance, yet its mode of production has not yet been explained. What I have to suggest is purely tentative. The wave of contraction passes from the great veins over the two auricles till it reaches the auriculo-ventricular junction, when there is a brief pause. Then

it passes over the ventricles to the apex and from the apex to the arterial outlet. In the normal heart the wave of contraction always begins at the same place and follows a definite course. As the contractions are normally perfectly regular, it is necessary to suppose that the function of stimulus production is most highly developed at the point where the contraction begins, and progressively gets less as one follows the path of the contraction wave. It seems to me necessary to suppose that an inhibitory influence is also normally exerted by the higher levels over the lower levels; otherwise, there would be nothing to prevent a contraction starting now and again at a lower level. Now the "extra systole" is undoubtedly a pathological phenomenon. It never occurs in the normal heart. Such a conception as here suggested seems to me more probable than the development of an irritable focus the result of fibrosis; such an occurrence would produce a stoppage or a block rather than an irritable focus. "Ex-



tra systoles" are seen sometimes as a result of toxæmia, as in diphtheria, or appendicitis. On recovery from diphtheria or after operation for appendicitis they may disappear altogether. They also occur in a variety of other conditions which it is needless to specify and in which a return to the normal speedily takes place. It is therefore certain that they may be due to a purely temporary disturbance of the heart's action. My idea is that in such cases the inhibitory mechanism is at fault and fails completely to control the irritable tissue below it. The "extra systole" is therefore the result of an escape of this tissue from control. In favour of this, we have the fact that "extra systoles" may arise in the same case from different parts of the heart at different times. In the same case we may get auricular and ventricular "extra systoles," or sometimes the one, sometimes the other. It is suggested, too, that in some cases the "extra systole" may arise in the "a.v." node. It is inconceivable, to my mind, that a portion of heart muscle may become more irritable, as the result of disease. One can understand a morbid lesion interrupting the path of the cardiac impulse, but not heightening the irritability of the heart.

#### Auricular Fibrillation.

The next form of irregularity to be discussed is that which is now generally ascribed to auricular fibrillation. Here, again, the term is unfortunate. A fibrillating auricle is one thing, an irregular radial pulse quite another. At the present time it is almost universally accepted as a fact that the onset of fibrillation in the auricle leads to complete irregularity in ventricular action. It is quite time that this opinion should be subjected to criticism. Let us first of all enumerate the facts and then we shall be in a proper position to discuss their relationship to each other. The first point clearly established is that the auricles are paralysed. When Mackenzie introduced his method of recording the movement of the different chambers of the heart nearly thirty years ago, one of the first facts he discovered was that the auricles were usually paralysed in cases showing a persistently irregular pulse. This was very naturally ascribed to over-distension, in accordance with the current views of the time. He does not appear ever to have been quite satisfied with this explanation and finally adopted the view of Cushman that fibrillation of the auricle was the cause of the irregular pulse, being largely influenced thereto by the experimental work of Lewis. Lewis's work is familiar to everyone. There is no doubt about the second fact that the auricles in these cases fibrillate. The third fact is that the radial is generally, but not always, irregular. As a rule, as soon as the auricle ceases to contract, the ventricular action becomes quite irregular; but there are exceptions, not numerous, but undoubted. I have notes of one undoubted case. This was a case of mitral stenosis in a girl of 21 years, who was under my treatment for about one year. She had suffered from rheumatism in childhood and had a loud, rough diastolic murmur at the apex, which at times resembled a pre-systolic murmur very closely. The pulse-rate varied from the normal up to 120. Venous pulse tracings always showed a com-

plete absence of any wave due to the auricle. I took many tracings at various times; the c. and v. waves were always well marked. She died of heart failure. During the whole time she was under observation the radial pulse did not once become irregular; it did not even show any "extra systoles," but it was almost always rapid. No *post mortem* examination was obtainable.

Mackenzie, in his book on the "Heart" (third edition), shows a venous pulse tracing illustrating the same point. He admits the fact that the radial pulse may be regular. The fourth fact I want to bring out is that this form of irregularity is common in old people. Probably more than half the cases of heart failure in those over 60 manifest this form of irregularity, whereas in childhood it is excessively rare, apart from diphtheria, and then only in the fatal cases of toxæmia. In the severe forms of rheumatic heart disease in childhood it is very exceptional. I remember seeing it only once and that towards the end of a long illness from heart failure. In addition to these four facts, it is generally held that in mitral stenosis the pre-systolic murmur, if present, will disappear and there is heard instead a mid-diastolic murmur, indicating that the left auricle is paralysed. In a paper published in this journal last year<sup>1</sup> I discussed the mode of origin of the pre-systolic and other murmurs. It is therefore unnecessary to go over the ground again. It is sufficient to say that the pre-systolic murmur is sometimes heard in these cases of auricular paralysis, as the case I have mentioned in this paper proves. I do not consider then that the presence of a pre-systolic murmur at the apex is any evidence of activity of the left auricle. The four facts we have to consider are, then: First, paralysis of the auricles; second, fibrillation; third, usually, but not always, irregular action of the ventricles; fourth, frequency in old age. The presence or absence of the pre-systolic murmur is merely an incidental, and not an essential, factor. To suppose that fibrillation of the auricle leads to irregular action of the ventricle appears to me very fanciful. Fibrillation of the auricle should logically lead to fibrillation of the ventricle, but it does not. Further, if it leads to an irregular pulse in some cases, how is it possible to conceive of its leading to a regular pulse in others? The whole idea is manifestly absurd. It is supposed by the supporters of this theory that the fibrillatory auricle showers a whole series of impulses on the a.v. bundle, which, reaching the ventricles at unequal times and being of unequal strength, produce irregularity of ventricular action. It is obvious that regular action of the ventricles would be impossible under such conditions. In my former paper on heart murmurs I explained how I considered auricular fibrillation arose and what it meant. I do not think that it has anything to do with the production of the irregular pulse. The most important factor is, to my mind, the paralysis of the auricle. Such a gross disturbance of rhythm might naturally be expected to lead to irregularity, were not perfect rhythmicity one of the fundamental properties of heart muscle. But the heart rapidly deteriorates after middle age. In the young it preserves its regular rhythm, even under the most unfavourable con-

<sup>1</sup> The Medical Journal of Australia, November 15, 1919, page 411.



ditions, such as in advanced rheumatic heart disease. In the middle-aged and elderly the tendency to irregularity becomes increasingly obvious, just as the tendency to heart failure becomes more marked.

#### Paroxysmal Tachycardia.

The next form of arrhythmia to consider is paroxysmal tachycardia. I have nothing to add to the text-book descriptions of this condition. In my previous paper I mentioned how I thought it was produced. I might add that one must suppose that normally there is a block between the rapid contraction of the primitive tissue and the usual rate of the heart. One supposes that during the paroxysms of tachycardia this block is broken down or inhibited in some way not yet understood. If this view be correct, paroxysmal tachycardia is, as it were, half way between the normal rhythm and ventricular fibrillation. In the auricle that condition is known and is called auricular flutter. If one admits that there are two rhythms in the heart, many obscurities can be cleared up.

About the other two forms of arrhythmia, "heart-block" and "*pulsus alternans*," I have nothing new to say. But I should like to add that "heart-block" is by no means the simple thing that it appears to be, as described in some of the text books. A very great deal more work must be done before the subject can be considered satisfactorily worked out.



Xanthoma Multiplex.



Xanthoma Multiplex.

## Reports of Cases.

### XANTHOMA MULTIPLEX.

By W. McMurray, M.D.,  
Honorary Dermatologist to the  
Sydney and Coast Hospitals.

The subject of *xanthoma multiplex* is of great interest, because of its aetiological obscurity and also its rare occurrence in children. The following case is worth recording, as it presents features of special interest. The patient was sent to me by Dr. Corfe, of Glen Innes.

M.J., age 7 years, a female.

**Family History.**—Her father is 52 years of age and has always been healthy. He has had patches of *xanthoma palpebrarum* on both upper eyelids for seven or eight years. Her mother is 33; she has three children, two girls and one boy; the patient is the youngest. There is no sign of syphilis in either parent. All the children are well nourished and none have been seriously ill.

When the child was one year old the mother noticed in the natal cleft little yellow spots varying in size from a pin's head to a split pea. They were not accompanied by any subjective symptoms. Little attention was paid to the eruptions until they became more numerous, appearing in crops between the fingers of both hands and in the popliteal spaces. At the age of 5½ these lesions were excised at the Victoria Hospital, Toowoomba, Queensland.

The patient is a bright, intelligent child in excellent health. There is no history of any illness. The urine is normal.

The eruption is most pronounced at both elbows. Here the lesions are discrete, grouped and consist of canary yellow or yellowish-orange coloured tubercles, varying in size from small shot to a pea. They are firm to touch when grasped between the fingers. She has also a few scattered symmetrical nodules on the gluteal folds and a large, round, raised tubercle on the back of the left thigh. On both popliteal spaces there are several scars where the lesions were excised and at their margin small, flat, yellowish papules have recently appeared.

\* She has, in addition, on both *tendo Achilles* a firm, smooth

growth, the size of a small walnut. The skin covering these has a yellowish tinge. Immediately above the growth on the right side is a yellow nodule similar in character to those on the elbow.

The photographs give a fair representation of the eruption.

## Reviews.

### OPHTHALMOLOGY.

Admirers of Swanzy's text-book on "Diseases of the Eye" will welcome the twelfth edition as evidence of the editor's intention to keep this work well up to date.<sup>1</sup> But for a few notable exceptions, this intention has been well fulfilled. It is surprising that the work of Major Gillies on the plastic surgery of the eyelids and socket and on the epithelial inlay method of skin grafting is passed over in silence. No mention is made of our extended knowledge from war experiences of concussion injuries of the retina and ocular tissues.

Diseases of the cornea are differently arranged and classified and descriptions are added of superficial linear keratitis and acute rosacea keratitis. The newer theories of the causation of iritis are described in some detail, with the methods employed in arriving at a definite diagnosis in a particular case. At the same time, the statement is made that "the most common cause by far of acute primary iritis is syphilis." This is at variance with the opinion of most recent observers. Whether or not we accept "rheumatic iritis" or pin our faith to the septic focus theory, the majority of observers find that the non-syphilitic cases far outnumber the syphilitic. There is an excellent chapter on focal brain disease, where the localization of lesions in cases of hemianopsia is lucidly described. Credit is given to Gordon Holmes for his valuable work in connexion with occipital war injuries and the cortical localization of visual functions. Mackenzie Davidson's method of localizing foreign bodies in the eye by the X-rays is given in fuller detail, but Sweet's method, which appears to be preferred by radiologists in this country, is not mentioned. For the extraction of metallic particles the author uses the Haab magnet; we would like to have seen some reference to the newer ring magnet of Mellinger, which is now being used frequently in England.

A few operations are described more fully, as the excision of the lachrymal sac and van Millingen's transplantation of mucous membrane for entropion. The book has many minor excellencies, such as good paper and print, also many beautiful illustrations, which, with an easy English style of writing, combine to make it extremely interesting and readable. It may be recommended as one of the best modern text-books on diseases of the eye, not only for the medical student and practitioner, but also for the graduate who desires to take up seriously the study of ophthalmology.

### SMALL-POX AND VACCINATION.

The Milroy lectures delivered by Dr. McVail before the Royal College of Physicians of London in March, 1919, have been issued in the form of a booklet.<sup>2</sup> The first lecture is devoted to a survey of the statistical and epidemiological history of small-pox in modern times. Much of the second lecture is concerned with a rebutment of the contention that infantile vaccination, whilst protecting the individual, makes small-pox so mild and so difficult to recognize, where it is not entirely prevented, that the result is such a spread of infection from missed cases as to render the practice disadvantageous to the community. The final lecture gives a detailed account of the measures of prevention and control which, in the absence of systematic vaccination and re-vaccination, ought, in the author's judgement, to be adopted when the disease appears in the present day. Abundant sta-

tistics are furnished to establish the thesis that natural small-pox gradually increased in virulence in the course of the eighteenth century, reached its maximum of fatality and infectivity in the pandemic of 1870-1873 and, since that time, has retrogressed alike in fatality, infectivity and prevalence. The American type of mild infection which reached Australia in 1913, is discussed. The author concludes that, whereas recent epidemics have been conspicuous in their low mortality and slight infectivity, should the disease assume in the future the old virulent European type, the means for meeting it are at hand.

If vaccination of contacts, supplemented by isolation, disinfection and the other methods used to control epidemics were to prove insufficient, then the spread of infection would bring about the adoption of universal vaccination which is the one measure capable of controlling an extensive epidemic.

An appendix is added by Dr. C. Killick Millard, Medical Officer of Health for Leicester, in which the lecturer's views with regard to the necessity for infantile vaccination and his judgement of the so-called "Leicester method" of dealing with an epidemic are held up to criticism. The volume is well produced and likely to become a book of reference in the history of small-pox and vaccination in Great Britain.

## Public Health.

### NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the eight weeks ending May 22, 1920:—

	Metropolitan Combined District.		Hunter River Combined District.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever ..	68	5	18	1	117	10	203	16
Scarlatina ..	77	1	8	0	83	1	168	2
Diphtheria ..	317	16	131	2	742	19	1190	37
*Pul. Tuberculosis..	164	56	15	4	5	3	184	63
C'bro-Sp'n'l Menin.	0	0	1	1	2	2	2	3
Poliomyelitis ..	3	0	0	0	1	0	4	0

\* Notifiable only in the Metropolitan and Hunter River Districts, and, since October 2, 1916, in the Blue Mountain Shire and Katoomba Municipality.

### VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the eight weeks ending May 23, 1920:—

	Metro- politan.		Rest of State.		Total.	
	Cs.	Dths.	Cs.	Dths.	Cs.	Dths.
Enteric Fever ..	24	2	84	2	108	4
Scarlatina ..	258	3	310	1	568	4
Diphtheria ..	602	16	1035	14	1537	30
Pulmonary Tuberculosis	91	60	40	19	131	79
Puerperal Fever ..	3	0	6	0	9	0

### QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the eight weeks ending May 22, 1920:—

Diseases.	No. of Cases.
Enteric Fever ..	186
Scarlatina ..	128
Diphtheria ..	717
Pulmonary Tuberculosis ..	48
Cerebro-Spinal Meningitis ..	18
Poliomyelitis ..	1
Erysipelas ..	18
Malaria ..	4
Anchylostomiasis ..	3
Puerperal Fever ..	7
Pneumonia ..	9
Influenza ..	60
Hæmaturia ..	1

<sup>1</sup> Swanzy's Handbook of the Diseases of the Eye and Their Treatment, Twelfth Edition, Edited by Louis Werner, M.B., F.R.C.S.I.; 1919. London: H. K. Lewis & Co., Ltd.; Demy 8vo., pp. 671, with 273 illustrations in the text and 9 coloured plates. Price, 22s. 6d. net.

<sup>2</sup> Half a Century of Small-Pox and Vaccination, Being the Milroy Lectures before the Royal College of Physicians of London on March 13 and 18, 1919, by J. C. McVail, M.D., LL.D.; 1919. Edinburgh: E. & S. Livingstone; Demy 8vo., pp. 87. Price, 6s. 6d. net.

## SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health Adelaide, during the seven weeks ending May 15, 1920:—

	Adelaide. Ca. Dths.	Rest of State. Ca. Dths.	Total. Ca. Dths.
Enteric Fever	6 0	30 3	36 3
Scarlatina	33 1	229 2	262 3
Diphtheria	29 6	296 7	325 13
Pulmonary Tuberculosis	17 12	86 25	103 37
Erysipelas	2 0	10 1	12 1
Morbilli	58 1	375 0	433 1
Pertussis	3 0	62 2	63 2
Puerperal Fever	0 0	4 3	4 3
Influenza	0 0	25 4	25 4

## WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the seven weeks ending May 15, 1920:—

	Metro- politan. Cases.	Rest of State. Cases.	Total. Cases.
Enteric Fever	35	51	86
Scarlatina	47	30	77
Diphtheria	102	95	197
Pulmonary Tuberculosis	23	24	47
Cerebro-Spinal Meningitis	1	0	1
Malaria	3	9	12
Beri-Beri	0	17	17
Erysipelas	3	1	4
Ophthalmia Neonatorum	0	3	3
Dengue Fever	0	1	1
Influenza	10	4	14
Pneumonia	5	2	7
Dysentery	3	1	4
Septicæmia	2	0	2
Low Fever	1	0	1

## TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the ten weeks ending May 1, 1920:—

Diseases.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Enteric Fever	7	16	65	88
Scarlatina	1	0	5	6
Diphtheria	24	18	104	146
Pulmonary Tuberculosis	11	7	15	33
Cerebro-Spinal Meningitis	0	0	1	1
Ophthalmia Neonatorum	1	0	1	2
Puerperal Fever	0	0	4	4
Malaria	2	0	2	4
Tubercular Meningitis	1	0	0	1

## VENEREAL DISEASES.

## Western Australia.

The following notifications of venereal infections have been received by the Department of Public Health, Western Australia, during the quarter ended March 31, 1920:—

	Civilian Males. Females.	Military. Males.	Total Infections.	Total Notifications.
Gonorrhœa	190 22	6	216	291
Primary Syphilis	27 4	2	33	48
Secondary Syphilis	6 6	0	12	23
Tertiary Syphilis	9 4	0	13	18
Congenital Syphilis	1 0	0	1	1
Chancroid	7 0	0	7	8
Granuloma	0 1	0	1	1

It has been announced in the *Government Gazette* of New South Wales (No. 96, of May 21, 1920) that a further postponement will take place in connexion with the operation of the *Venerel Diseases Act, 1918*. For the present venereal diseases are not notifiable in New South Wales.

## Congress Notes.

The date of the Australasian Medical Congress is August 23-28, 1920.

The official address of the Congress is: The Honorary Secretary, 11th Session, Australasian Medical Congress, B.M.A. Building, Adelaide Street, Brisbane.

The following are the Local Secretaries in the several States:—

*New South Wales:* Dr. F. Brown Craig, Macquarie Street, Sydney.

*Victoria:* Dr. A. Leo Kenny, Collins Street, Melbourne.

*South Australia:* Dr. F. S. Hone, North Terrace, Adelaide.

*Western Australia:* Dr. W. Trethowan, 267 St. George's Terrace, Perth.

*Tasmania:* Dr. E. Brettingham Moore, Macquarie Street, Hobart.

*New Zealand:* Dr. C. E. A. Coldicutt, 82 Simonds Street, Auckland.

*Queensland:* The Honorary General Secretary and the Coadjutor Secretary, c/o. Queensland Branch, British Medical Association, Adelaide Street, Brisbane.

The following is a list of the Honorary Secretaries of the Sections:—

(i.) *Medicine:* Dr. Andrew Stewart, Wickham Terrace, Brisbane.

(ii.) *Surgery:* Dr. Donald A. Cameron, Wickham Terrace, Brisbane.

(iii.) *Obstetrics and Gynecology:* Dr. Lillian V. Cooper, George Street, Brisbane.

(iv.) *Pathology and Bacteriology:* (In place of Dr. A. W. Dean) D. J. V. Duhig, Wickham Terrace, Brisbane, and Dr. A. Breinl, Institute of Tropical Medicine, Townsville.

(v.) *Public Health:* Dr. J. S. C. Elkington, Federal Quarantine Department, Brisbane.

(vi.) *Ophthalmology:* Dr. J. Lockhart Gibson, Wickham Terrace, Brisbane.

(vii.) *Otology, Rhinology and Laryngology:* Dr. W. N. Robertson, Wickham Terrace, Brisbane.

(viii.) *Diseases of Children:* Dr. A. Jefferis Turner, Wickham Terrace, Brisbane.

(ix.) *Naval and Military Medicine and Surgery:* Dr. G. P. Dixon, C.B.E., Wickham Terrace, Brisbane.

(x.) *Neurology and Psychological Medicine:* Dr. T. H. R. Mathewson, Brunswick Street, New Farm, Brisbane, and Dr. J. R. Nicoll, Hospital for Insane, Toowoomba.

(xi.) *Dermatology and Radiology:* Dr. V. McDowall, Preston House, Queen Street, Brisbane.

Members are particularly requested to announce their intention to read papers to the Sectional Secretaries concerned and not to the State Secretaries. The papers should also be forwarded to the Sectional Secretaries.

## Travelling.

We are informed by the Executive Committee that the shipping companies have definitely declined to grant concessions to members of the Congress travelling by sea. The railway concessions published in our issue of May 15, 1920, hold good.

## Accommodation.

Medical Practitioners who intend to join the Congress, are urged to do so as early as possible and to notify the Local Secretary in the State in which they reside, their requirements in regard to accommodation.

## Section of Surgery.

The Honorary Secretary of the Section of Surgery announces that the following subjects have been selected for special discussion in the Section:—

(i.) Injuries to nerves and the results of operative treatment.

(ii.) Fractures and the treatment of the disability resulting from extensive loss of bone.

(iii.) New growths of the bladder and their surgical treatment.

The Honorary Secretary invites members who are willing to read papers or take part in the discussion on these subjects, to communicate with him as soon as possible.



## The Medical Journal of Australia.

SATURDAY, JUNE 5, 1920.

### Crimes and Criminals.

The law demands that when a crime is committed, the perpetrator shall be punished in accordance with the enormity of his deed. The law-makers, the judges dispensing so-called justice, the lawyers arguing for the prosecution and the majority of the morbidly-minded public reading the nauseating details in the daily press—aye, and gloating over these details—judge the act without any consideration for the mind of the evil doer. Some crimes are committed by vicious people for definite motives. These acts are deliberate and it is but right and just that "the punishment should fit the crime." Society must be protected and the punishment should be severe and deterrent. Again, it may be said that those who are supposed to mete out justice, and those who frame the laws for the country's good, fail to exercise that degree of discrimination needed for the achievement of this purpose. The parent does not whip the child when it has been naughty for the love of inflicting pain. The whipper often suffers more than the whipped. The punishment is carried out in the hope that it will prevent a repetition of the erring behaviour. A wise parent refrains from repeating the whipping, as soon as he discovers that it has failed to effect its one and only purpose. Other measures have to be sought and applied. We read in the daily papers that a man has been committed to goal for the tenth or twentieth time for the same kind of offence. A thief too often robs someone soon after his release from prison. The law fixes the maximum term of imprisonment for each indictable offence and the judge and people are satisfied to allow the farce to persist. Could anything be more illogical than the alternating imprisonment and liberation of a hardened criminal? How is the public protected against his depredations? Kind folk endeavour to reform the inhabitants of our penal institutions. The task may have some chances of success when the offender is in for the first time and is of normal mentality. After a second term, these chances have

become remote and after the third term, they are entirely illusory. In a word, imprisonment is not a deterrent to an habitual criminal. Even the stocks, with the accompanying derision of the village boys and the undoubted discomfort, did not impel men to mend their ways. The "cat" is said to frighten even hardened sinners. The lash is no doubt an excellent instrument to bring individuals guilty of violent crimes against the person to their senses, but its frequent use would probably reveal almost as frequent failure as imprisonment for a term does. There is in our opinion but one rational method of punishing crimes. For the first offence a severe sentence of imprisonment should be tried, after it has been established that the individual is not mentally defective. If the same or an analogous crime is repeated, the individual should be placed in a penal establishment for the remainder of his life. It will be noted that there is one important reservation in this suggestion. The individual must be of normal mentality. Perhaps it would be better to extend this to imply that the individual must have had at the time of the commission of the act complete control over his impulses and a proper recognition of the significance of his act. The reservation will be found to reduce the number of those who should be punished for crimes, to a very small number indeed.

The real problem of the prevention of crime is scarcely influenced by the punishment of normal individuals who have committed the crimes deliberately and with a preconceived motive. The law does not differentiate between a normal individual and a person whose mental make-up is deficient, provided that this person is not certifiably insane. This lack of understanding is one of the most serious blots on the surface of our social system. An individual is convicted of a crime. It can be shown that during the early period of his development, there has been an arrest in the perfection of the system of cells in the sub-cortical layer of his brain. The cells may be present in their normal number, but they may have remained half fashioned and incapable of forming association paths with other cells. They may be present but under-nourished, with the result that under stress, they may fail to perform their proper functions. Or they may be deficient in number. Those cells that are indispensable to the nor-

mal control of the impulses, may be half finished. The defect may be ostensibly slight, so that under ordinary circumstances the individual may appear to be like other average children. A close study by an expert medical psychologist will disclose a definite defect. Usually the parents and the school teachers fail to recognize the abnormality, but ascribe certain misdeeds to perverseness, playfulness or laziness. If the home influences are good and the parental care directed with wisdom and forethought, the defects may be almost undetectable. In other circumstances, the behaviour of the child may be irrational and surprising. The child grows to adult age and the emotions and instincts become more fully developed. Later there arises an incident of trial. This individual does not possess a normal control over his emotions. Passions arise, which normally would be held in check by a mechanism of educated associations. The normal man curbs his passions, refrains from allowing his emotions to govern his actions, when these actions entail a disregard of ethical considerations. When offended, a normal man does not attack and kill his offender. When exposed to the temptation of helping himself with the property of others, the normal man has no difficulty respecting the law that stealing is wrong. If a normal individual is seized with sexual desires, he does not throw aside reason and his sense of proportion. He recognizes the possible consequences of an impulsive act and determines his line of action in the light of reason. The mental defective has no power to act as a brake between his emotions and his judgement. The desire may be strong and he will give way to it, without any thought of the consequences of his act to himself or to others. He is not responsible for this lack of control. It is due to the defective mental make-up. Is it reasonable to deal with a mental defective who steals or who commits murder or who assaults a girl, in the same stereotype manner as we deal with a normal individual? The judge investigates the crime. The law has no regard for the mind of the criminal. And yet everyone who has given this subject any serious study, knows that the law and the judge have started out with an entirely warped conception of the tragedy with which they are concerned. It may be asked: How can the judge distinguish between the individual whose sub-

cortical cells are starved and consequently refuse to work in complete harmony with one another, from the individual who is suffering from no such disability? It may be urged that the punishment is right, even if the individual has not the power to curb his passions; the public must be protected. The judge, not being medically trained, is incapable of differentiating between a normal individual and a moron and he should not endeavour to accomplish the task. He should have at his disposal at all times medical psychiatrists whose long training enables them to arrive at a correct estimate of the mental qualities of the individual on trial. To punish an irresponsible individual is utterly indefensible, since no punishment can act as a deterrent when the individual has no power of control over his actions. More than that, the public is not served by the incarceration of a mental defective in prison for a term. On his release his mentality will be found to be less amenable to training than before. In addition his association with normal criminals will leave an indelible mark.

We therefore claim that the criminal law should be amended in order that the person should be judged and not the crime. We have on many occasions endeavoured to point out the necessity for the establishment of training schools where medical men could study the innumerable phases of mental deficiency. Highly trained specialists should be available for the detection of abnormal children in the home and at school. They should also be available for the recognition of the mental deficient in the courts. Their knowledge should be utilized for the purposes of building up a rational form of mental hygiene to be applied in the home. Lastly, their advice should be taken in regard to the nature of the permanent control that should be exercised over the mental defective when discovered.

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#### THE MEDICAL COURSE.

The delegates of the several Australian Universities during the conference held last week in Sydney, dealt with only one subject directly connected with the education of medical students. They arrived at a very wise decision after a short debate on this isolated medical subject. The question was raised by Sir Joseph Verco, the Dean of the Faculty of Medicine of the Adelaide University, whether the

time had not arrived when the course should be extended from five to six years. The delegates referred the whole question to the Medical Faculties of the Universities of Sydney, Melbourne and Adelaide. It would have been a hazardous undertaking had the delegates, of whom the majority are not medical practitioners, attempted to come to a conclusion on this subject.

During the past year, we have on numerous occasions discussed the subject of a reform of the medical curriculum. There seems to be unanimity in regard to the necessity for some change in the curriculum. Those engaged in teaching, as well as those who watch the practice of medicine and the progress in medical science, are agreed that this change should be introduced immediately. The student at present is required to crowd into the fifteen or sixteen terms more than he can digest. Some of the matter he has to assimilate, is of the nature of abstract knowledge, little related to the science and art of medical practice. The scheme on which the training is based, was devised a long time ago, when the course was simpler, because there were fewer special subjects and less applied science. The course at that time was admirably suited for the equipment of medical practitioners. Progress and the introduction of more exact methods of diagnosis demand that the training shall undergo modification. The time has now arrived when it is doubtful whether the modern needs can be fitted into the old scheme. At present there are two schools of thought. The first desires a slow transition from the old to the new. This somewhat reactionary view is not unreasonable, because it is argued that a new scheme, while removing certain obvious defects of the old order of things, is likely to introduce new defects which may be even more important than those they would replace. This argument applies to all proposals of reform. The retention of an institution that has served its ends is not justified, if the only objection to its abolition is that the substituted institution may be faulty. The second school of thought demands a violent revolution. It is held that the present-day needs are so different from those of twenty years ago, that it is bad architecture to endeavour to rebuild on the same foundation. In his admirable speech during

the discussion at the conference, Professor J. T. Wilson, Dean of the Faculty of Medicine of the University of Sydney, advocated a lengthening of the course. He held that the added time should be devoted to the study of the fundamental sciences. We are in entire agreement with Professor Wilson when he says that physics, chemistry and biology cannot be properly taught to the future medical student during his school days. We hold very strongly that these sciences should be taught throughout the entire medical course. Professor Wilson stated that the medical practitioner of to-day has to think in terms of physical chemistry and biology. It therefore follows that a preliminary training in these subjects during the first two years of the medical course is wholly inadequate. Some practitioners urge that the proposals put forward by this *Journal* a short time ago involve too much attention to chemistry and to physics. It should be pointed out that the chemistry and the physics we would teach to students are to a very large extent applied to medical problems. It has been stated that it is unnecessary to train medical practitioners to be expert chemists. Unless the medical student is trained to understand the fundamental sciences on which medicine is based, he must fail to be expert in his own subject. It is unfortunately true to-day that the laboratory technique of the majority of the teachers of medical students is so imperfect that the average young graduate is incapable of delivering a cubic centimetre from a graduated pipette with accuracy. Our medical practitioners talk about acidosis, but have but a hazy conception of what is meant by hydrogen ion concentration and are quite unable to describe how this is determined and how the measurements are correctly expressed. In our great hospitals patients are treated for chronic nephritis day after day and month after month. How many of the teachers at the medical schools have examined the metabolism of these patients and have endeavoured to apply the knowledge derived from such a study for the benefit of the patients? Each year brings its harvest of discoveries. Progress in medical problems means the application of physical, chemical or biological knowledge to these problems. It is useless for anyone to attempt to treat disease without a good equipment of knowledge of these fundamental sciences. They



should not be regarded as subjects to be studied during the elementary period of the student's course. The boy just out of school will have difficulty in mastering some of the elements of these sciences, but as he becomes more mature and as he is shown the inseparable association of these sciences with the practice of medicine, he can be adequately trained to understand the nature of the processes of the body and of the pathological changes that may occur. He gradually learns to think in terms of medical chemistry, medical physics and biology. This end will be achieved only if the instruction is continued throughout the five or six years of the course.

#### TESTS OF CARDIAC EFFICIENCY.

The tendency of modern thought in relation to cardiac efficiency is to regard the estimation of the field of cardiac response to effort as the most important single criterion of the functional capability of the heart of an individual. The question of evolving suitable tests of cardiac efficiency became of great practical importance at the outbreak of the recent war, in the examination of recruits for the armies. Now that war is over, the question is frequently of paramount importance in the case of men suffering from a cardiac disability as a result of active service. In civil life satisfactory tests may be found necessary in determining the physical fitness of Government employees and others for work of various kinds and in the examination of applicants for life insurance.

The comparative usefulness of various tests of cardiac efficiency has been recently discussed by Dr. T. E. Satterthwaite, of New York.<sup>1</sup> Apart from the neurological tests by trigeminal irritation, the oculo-cardiac reflex and atropine and epinephrine tests, the more important methods of investigation depend on the reaction of the heart to either active or passive exertion. Various efforts have been made to evolve a mathematical formula to express the efficiency of the heart.

The test devised by Selig has been frequently used. The pulse-rate and systolic blood pressure are taken before and after the subject has climbed a flight of twenty steps. It is stated that there is normally an increase of twenty beats per minute and a rise of blood pressure of 8 mm. Hg.. If the heart be inefficient the pulse-rate may increase by 30 or more beats per minute, while the blood pressure rises more slowly or may fall. The length of time taken for the recovery of the normal systolic pressure is regarded as an index of cardiac efficiency. The test has been modified for the purpose of examining recruits for the American Army, by making the patient hop 20 paces on one foot. It is obvious, however, that the measure of the amount of work done in these performances is inexact. Other observers have endeavoured to estimate in foot-pounds the actual amount

of work done when the patient ascends stairs of known height in a given time. A more accurate estimate of the energy expended may be made by a special instrument called the ergometer, devised by Gräupner. Other methods of testing have been employed, such as the compression of both femoral arteries and numerous calculations based upon systolic and diastolic blood pressures and pulse-rate. It is obvious that absolute accuracy in estimating the degree of cardiac efficiency cannot be obtained by our present methods of examination. The results obtained by such means are of relative importance. Each individual has his own "energy index," which may vary according to age, weight, height and various other conditions. It is generally admitted that in the past too much attention has been given to the evidence of disease of the heart offered by murmurs and other abnormal signs and not sufficient account has been taken of the capacity for work which the heart of the individual possesses.

#### LIPODYSTROPHIA PROGRESSIVA.

It is well known that the average human being looks at objects at frequent intervals without recognizing them. It is by no means uncommon for a disease to have existed in a relatively large number of individuals, unrecognized, until at last some observers, more astute and more vigilant than the rest, describes the process as a new one. In the year 1910 Simmons introduced the term "*lipodystrophia progressiva*" for a condition in which the subcutaneous fat in certain regions of the body is absent. In the following year he published a full description of the condition. Since that date reports of 27 cases have been published. From the accounts given of some of the patients, it would appear that *lipodystrophia progressiva* is not the rare condition the earlier writers thought it to be. It is in the opinion of Dr. C. Louis Leipoldt<sup>1</sup> highly probable that the "skeleton men" described by many writers in the eighteenth century and the common cases of emaciation without organic disturbance recorded from time to time in literature, are examples of this condition. Dr. Leipoldt, in his capacity of Medical Inspector of Schools in the Transvaal, has seen the condition in three children. He gives an excellent description of the appearances of these children and of the condition of their organs and systems. The absence of subcutaneous fat usually involves the face, neck and upper part of the chest. The skin is wrinkled and the child has the look of an old man. In two of his patients there were no signs of any disturbance of the thyroid or other endocrine organ. The patients were athletic, muscularly well-developed and active. There was no mental retardation nor any indications of other developmental abnormality. It is held that the condition begins at about the age of six years. Dr. Leipoldt points out that it is highly probable that it starts at an earlier stage. From photographs of the patients taken in early childhood, the characters were discernible, although the parents did not notice any peculiarity in the facial expression of their children. He is in-

<sup>1</sup> *Medical Record* (New York), February 21, 1920.

<sup>1</sup> *The Medical Journal of South Africa*, February, 1920.

clined to regard the condition as due to some antenatal disturbance by "circulatory toxins of low potency." We must admit that the assumption of an alleged toxin does not simplify the problem of the aetiology of this condition. It is supposed to occur more frequently in girls than in boys. All Dr. Leipoldt's patients, however, were boys. The absence of subcutaneous fat is not progressive in the ordinary meaning of the word. The singular selection of areas is one of the most extraordinary characters of the disease. Whether this selection is governed by changes in motor or motor-trophic areas in the brain, as suggested by the author, remains to be proved. Apparently it does not endanger life or materially incommode the patient, although the disfigurement due to the atrophy or absence of subcutaneous fat in the face is often distressing to the patient.

#### VACCINE TREATMENT OF DIPHTHERIA CARRIERS.

The problem of efficient treatment of the diphtheria carrier has long been recognized as difficult and unsatisfactory. The multiplicity of the various methods advocated is in itself evidence of their comparative worthlessness. Early in 1916 an investigation was undertaken by Dr. J. L. Brownlie<sup>1</sup> with the object of determining a specific and more reliable method of treatment. After an exhaustive examination of the bacteriology of the fauces and accessory sinuses in diphtheria carriers, treatment by a vaccine prepared from the *Bacillus diphtheriae* was instituted. The vaccine used was made in the usual manner and was not necessarily autogenous. Careful observations made on fifty patients who were carriers of diphtheria bacilli, showed that the bacilli did not behave uniformly after treatment by vaccine. It was found that in 26% of the cases observed the results of throat swabbings became negative 24 hours after the administration of a single dose of the vaccine. In other cases the transition from positive to negative took place more slowly. The bacilli were observed first to lose their bi-polar characteristics, later to become granular and degenerate.

In a third group of cases the transition was effected through various phases or modifications of diphtheroid change. The dose of vaccine administered was from ten millions upwards, inoculations being made every four days. In the series of cases recorded 88% became negative after 11 days. The maximum number of inoculations in a single case was three.

The vaccine appeared to be capable of instituting well defined involution formation, with subsequent dissolution of the bacilli. The involution forms were comparable to forms produced by alteration in the growing conditions of the organism when cultivated *in vitro*.

The interval of time which had elapsed before a patient infected with diphtheria received an injection of antitoxin, appeared to have had a direct relationship to the probability of the carrier state supervening. It is concluded that the vaccine treatment of diphtheria carriers has the effect of producing specific antibodies with definite bacteriotrophic action.

This method of vaccine treatment is worthy of fur-

ther investigation and gives promise of a more rapid and effective means of dealing with carriers than has been possible hitherto.

#### THE APPOINTMENT OF PROFESSOR J. T. WILSON.

Professor J. T. Wilson, Professor of Anatomy at the University of Sydney, has been appointed to the Chair of Anatomy at the University of Cambridge. This position has been vacant for about a year, since the death of Professor Alexander Macalister. We congratulate Professor Wilson on having secured so important a position and more especially on having been selected from a very large number of eminent anatomists. He will have the advantage of being associated with many celebrated scientists as co-professors in the faculty of medicine. The University of Cambridge will have the advantage of the services of a distinguished scientist, a highly competent teacher and a man of great versatility. We are not prepared to discuss the relative importance of the Universities of Cambridge and of Sydney, neither do we wish to refer in this place to the loss which the students at Sydney and the medical profession in the Commonwealth will incur. We can only hope that Professor Wilson will soon overcome the regret of parting from his old friends, colleagues and pupils and that he will be spared for many happy and useful years on the other side of the world.

#### THE DEATH OF DR. GEORGE ERNEST MORRISON.

It has been announced that Dr. George Ernest Morrison, the political adviser to the President of the Chinese Republic, is dead. His career has been a most remarkable one, his influence far reaching and lasting. He was born in Geelong, Victoria, in 1862. His father was the Principal of Geelong College, a learned man and an excellent citizen. George Ernest Morrison was educated at Geelong and then passed into the University of Melbourne. Later he continued his studies in the University of Edinburgh, where he graduated in medicine and surgery in 1887. Prior to this he revealed his indomitable spirit and irresistible love for adventure. In 1882 he set out from Normanton on the northern coast of Queensland on foot and forced his way to Melbourne. The following year found him in New Guinea, where he nearly paid the extreme penalty for hazardous adventure. He did not remain long in Scotland. The attraction of the East was great to him and in the early 'nineties he started his extensive wanderings throughout the vast Empire of China, wanderings which have proved so fertile and so valuable socially, economically, politically and scientifically. He succeeded in traversing the continent from Shanghai to Rangoon in 1894. During this journey he collected information and made observations of great value. In 1895 he was appointed by the *Times* special correspondent for Indo-China, Siam and Peking. During the following years his duties as *Times* correspondent took him to many places previously unvisited by Europeans. His work was soon recognized by the authorities in Europe and his reputation became firmly established. He was in Peking during the siege of the Legations in June to August of 1900. His gift as a writer, added to his ability as an observer, lent an extraordinary value to his descriptions of this period. At a later date he participated in the triumphal entry into Port Arthur. The story of his services to the *Times* and to the British Empire is a long and intensely interesting one. In 1912 the authorities of the newly established Chinese Republic realized that there were few men whose knowledge and ability were sounder or more varied than George Ernest Morrison. He was therefore asked to serve as political adviser to the President, a position of extreme difficulty and great responsibility. He was great enough to overcome the former and to bear the latter with complete success. As a diplomat he was excellent; his judgement of men, matters and situations was reliable and sound; his tact and cleverness in expression stood him in good stead on all occasions. He was a highly polished gentleman. His conversation was engrossing and as a companion, he had few equals. It has been said of Morrison that his versatility and the charm of his manner made him the most fascinating conversationalist in the world.

<sup>1</sup> *Lancet*, March 27, 1920.

## Abstracts from Current Medical Literature.

### THERAPEUTICS.

#### (199) Potassium Mercuric Iodide as a Germicide.

The subject of antiseptics acquired a fresh interest early in the war owing to the large numbers of patients suffering from infected wounds who were admitted to military hospitals. In former times personal preferences based largely on empiricism or on solubility or other collateral qualities of various germicidal substances led to the choice by individual surgeons of solutions to be used as antiseptics. A comparison of germicidal substances should be based on: (1) bactericidal efficiency, (2) physical and chemical properties. The germicidal value of potassium mercuric iodide has recently formed the subject of an investigation by D. Macfarlan (*Amer. Journ. Med. Sciences*, April, 1920). It is claimed that besides possessing high bactericidal potency, this substance has distinct and valuable features making for its superiority over other salts of iodine and mercury. This substance possesses a high degree of solubility in water, alcohol and acetone. As compared with mercuric chloride, it is far less toxic and in dilutions effective for germicidal use, it is comparatively harmless when employed for irrigations of mucous membranes or in any region where it is likely to be swallowed. When a 1 to 1,000 solution is used, 30 c.cm. would require to be swallowed to obtain a minimum medicinal dose. The mucous membranes are slightly irritated by 0.5% solutions, which cause a burning sensation and stimulate a watery excretion. Solutions of this strength have little or no irritating effect on the skin when applied as a compress for 24 hours. Solutions of 1 to 1,000 used as lotions cause none of the disagreeable effects upon the hands which are produced by similar dilutions of perchloride of mercury. Contrary to the action of other metallic germicides in the presence of proteins, potassium mercuric iodide fails to precipitate these substances. The lack of affinity for serum proteins is an important consideration in cases in which it is desired to achieve potent germicidal action in the presence of blood, pus or similar tissues. Experiments performed to estimate the germicidal action of this substance have shown that dilutions of potassium mercuric iodide 1 to 80,000 were effective in destroying *Bacillus typhosus*, *Staphylococcus aureus*, *Bacillus bulgaricus*, *Bacillus acid lactici* and a yeast after 24 hours' exposure. A pus producing organism, such as the staphylococcus, has been shown to be destroyed in five minutes by a 1 to 5,000 solution. When compared with iodine solutions the double iodide was far superior in destroying staphylococci, *Bacillus coli* and the sporulating *Bacillus subtilis*. The presence of organic matter in the form of human serum albumin diminishes the potency of this germicide to a relatively slight degree. These facts,

taken in consideration with its freedom from irritant action and its comparatively low toxicity, render this double salt of the iodides of potassium and mercury one of the most useful of the inorganic germicides.

#### (200) Digitalis in Epidemic Influenza.

During the recent pandemic of influenza the belief that the death of patients affected with pneumonia resulted from heart failure led to the wide-spread employment of digitalis in the treatment of this condition. The utility of this drug in the treatment of these cases forms the subject of a recent investigation by T. S. Hart (*Amer. Journ. Med. Sciences*, November, 1919). This author points out that the marked cyanosis frequently observed in cases of influenza was in all probability the reason for supposing that the right side of the heart was failing. Electrocardiographic observations and *post mortem* examinations did not bear out the contention that heart failure was the immediate cause of death. An attempt was made to ascertain whether the action of digitalis on the heart in severe influenzal infections was in any way beneficial. The tincture of digitalis and ampoules of "digifolin" (a solution of digitoxin and digitalin) were used in these investigations. Both of these preparations were proved to be potent by physiological tests in the laboratory. The routine method of treatment adopted was to begin the administration of digitalis as soon as the diagnosis of pneumonia was reasonably sure. The tincture was given in doses of 1.5 mls. every four hours for six doses; then 1 ml. every eight hours. Digifolin was administered by intravenous injection in doses of 1 to 2 mls. every four hours for four doses and was followed by oral administration of the tincture. Electrocardiographic records proved that these doses were sufficient to produce the characteristic effects of digitalis on the heart. Control cases were observed concurrently, in which no preparations of digitalis were administered. No difference in the course of the disease could be observed in the two groups of cases. The terminal increase in the heart rate in the fatal cases was identical whether the patients had been treated with digitalis or had received none whatever throughout the course of the disease. No differences were noted in the behaviour of the blood pressure in the cases of the two groups. Among the patients under treatment were certain cases of auricular fibrillation and chronic valvular disease. It was noted that these cases showed a favourable response to digitalis in the usual manner. The author concludes that the employment of a method of treatment based upon a wrong conception of pathology may lead to a false sense of security; efforts should rather be directed towards securing means of treatment founded upon a sound pathological basis.

#### (201) Delayed Salvarsan Poisoning.

Numerous cases of delayed poisoning after intensive treatment by "606" preparations have recently been reported

from various sources. A report of 58 cases occurring in a military hospital has recently been published by G. S. Strathy, C. H. V. Smith and B. Hannah (*Lancet*, April 10, 1920). Eight of the cases terminated fatally. The writers emphasize the necessity for careful physical examination of patients before and after treatment by intravenous injection of the salvarsan preparations. It is important that the examination should include tests for albuminuria and that careful watch should be kept for the onset of symptoms suggestive of chronic mercurial or arsenical poisoning in all patients undergoing intensive treatment for syphilitic infections. Investigation of the cases recorded showed that these precautionary measures had not been carried out sufficiently careful. The symptoms noted in all the acute cases were similar. The onset was rarely until five weeks after the administration of salvarsan had ceased. Jaundice was usually first noted, followed by nausea, epigastric pain, hæmatemesis, stupor, delirium and death. The urine was found to contain bile and usually albumin as well. The amount of salvarsan which had been administered in the fatal cases showed considerable variation. In the remaining group of non-fatal cases, symptoms of a milder character were observed, jaundice, dermatitis, loss of weight, epigastric discomfort, headache and general malaise being frequently noted. *Post mortem* examinations on fatal cases showed that the essential lesions were: (i.) an acute atrophy and degeneration of the liver substance, (ii.) cloudy swelling of the kidneys, (iii.) mesenteric hæmorrhages, (iv.) early myocardial degeneration. The treatment recommended in cases of delayed poisoning consists primarily of rest in bed, together with a diet rich in carbo-hydrate and poor in fat. Alkaline drinks of sodium bicarbonate solutions are advised.

#### (202) The Treatment of Hysterical Deafness.

Arthur F. Hurst (*Med. Press*, January, 1920) writes that when hysterical deafness is associated with mutism it requires no special treatment, as hearing almost invariably returns spontaneously when speech is restored. Uncomplicated deafness is much more difficult to treat. Hypnosis is never of use, because the patient remains deaf while hypnotized and consequently hears no suggestions. Electricity, sometimes successful, often fails. "Fake" operations, not invariably successful, are undesirable, because it is better for the patient to understand the exact means by which he has been cured than to be fooled into a cure by gross suggestion. The best and most rational form of psychotherapy is explanation, with persuasion and re-education. The patient is made to understand by written explanations why he is deaf and that the original cause of his deafness long ago disappeared. He is assured that at first he could not hear because the deafness was organic and consequently after a time he ceased to listen. He is next persuaded to listen intently and is taught that



listening requires a conscious effort, until it becomes automatic once more. Improvement is gradual, the sound of the voice is generally heard before words can be recognized, a gramophone before the tune. Later he may hear the beginning but not the end of a sentence, because his attention becomes fatigued. Perseverance on these lines brings perfect recovery.

#### UROLOGY.

##### (203) Hæmato-Chyluria.

H. H. Hampton in reporting a case of non-parasitic hæmato-chyluria, calls attention to the fact that not more than a dozen cases of non-parasitic chyluria have been reported (*Bull. Johns Hopkins Hosp.*, January, 1920). The term "non-parasitic" should be reserved for those patients who have not been exposed to infection from filaria. The patient was 23 years old and had lived in the mountains of Virginia. She had been delicate for the past nine years, dating from a severe attack of chorea. During this time she was subject to syncope attacks and her urine had presented a milky appearance, more intense in the mornings. The patient was subjected to five cystoscopic examinations within four weeks. No bacteria were grown from the renal or vesical urine, nor were tubercle bacilli discovered. Several differential blood counts were made, all of which showed a slight eosinophilia. The urine varied in character throughout the day. It was abnormal in the morning and almost normal at times during the day. The first specimen in the morning was invariably milky and upon standing a light-red, jelly-like material formed and floated near the top of the vessel, a bloody sediment collecting on the bottom. These specimens were usually acid. All specimens contained red blood cells, leucocytes and albumin. No sugar, parasites nor ova were found. The specific gravity varied from 1.006 to 1.018. No casts were found. Simple experiments with the diet were made over a five-day period. They demonstrated that during starvation or a fat-free diet, the urine became fat-free, although blood cells and albumin persisted. Posture influenced but did not control the amount of lymph leakage. Increased water intake and urine output increased the fat loss. The conclusion arrived at was that the case was a true non-parasitic chyluria, the leak being localized in the lymphatics in the right kidney. In cases of this kind the connexion between the lymphatic and urinary systems probably consists of ruptured varicose lymphatics belonging to the deep lymphatic system of the kidneys. Lymphatic fistulae, wherever they occur, are usually associated with mechanical blockage of the large trunks or the thoracic duct.

##### (204) Tumours of the Bladder.

Robert H. Herbst and Alvin Thompson teach that there are two common varieties of bladder tumours, papillomatous and carcinomatous (*Journ. Amer. Med. Soc.*, January 10, 1920). The

former are fibrous, benign or malignant and the carcinomata adenoid or diffuse. The papillomatous growths, benign or malignant, are by far the commonest form of tumour found in the bladder. They occur in various forms, coarse or fine villous growths with more or less narrow pedicles, flat or lobulated forms, or they may be sessile. They vary greatly in size and are frequently multiple, commonly occurring in the trigonal area, especially about the ureteral orifices and at the edge of the trigone. They have been observed at all periods of life, but are commonest after middle life, especially in the sixth decade. They occur about three times as frequently in men as in women. Their course is prolonged and they have a tendency to remain confined to the bladder. A few of them remain benign for many years, but the majority eventually become malignant. Many are malignant from the beginning. Fulguration will usually remove tumours, if benign, or recurrences, or even additional tumours appearing later, whereas it is of no use where the tumour is malignant. Sessile and flat, warty growths are invariably malignant, while there are certain characteristics suggesting malignancy, such as ulceration or sloughing, calcified incrustations, oedema about the base of the growth, nodules in the mucosa near the growth, the presence of an intractable cystitis, induration felt through the bladder or rectum and multiplicity or great size and the slow response to fulguration. Extension of malignant tumours may occur through the bladder wall to other pelvic structures, up the ureter to the kidneys, and along the pelvic lymphatics to the prevertebral lymphatic glands. Metastases are rare. Hæmaturia, especially of the intermittent painless type, calls urgently for cystoscopic investigation. If the tumour is benign, fulguration gives the most satisfactory results. Surgical removal of both benign and malignant growths is attended in a large number of cases by recurrences. Partial resection for carcinoma gives better results than simple removal of the growth. Radium in malignant cases gives more encouraging results. Care must be taken to have the radium directly on or in the tumour itself and to keep it there. The authors describe their usual procedure in malignant cases. If accessible, the growth and bladder wall of that region is resected with an electro-cautery knife. If not easily accessible, such as in the trigone, the growth is excised down to the muscularis and radium applied to the denuded area. Sessile growths, those with broad pedicles and malignant prostates are treated by introducing needles containing radium into the growths. The results are claimed to be sufficiently encouraging to warrant continuation of the method.

##### (205) Urethral Stricture.

Maximilian Stern recommends the following plastic operation for the cure of urethral stricture (*Journ. Amer. Med. Assoc.*, January 10, 1920). The patient is placed in an exaggerated lithotomy position. An inverted V incision is made, the apex corresponding to a point

about 2.5 cm. above the position of the tip of the staff in the urethra. The flap is dissected carefully. At the apex of the denuded area the bulbo-cavernosus muscles are separated from above downward in the median line, care being taken not to puncture the *corpus spongiosum*. The dissection is carried as far down as the transverse perineal muscles, at which point the bulbo-cavernosus muscles are firmly fixed to these muscles and to the *corpus spongiosum*. The two bulbo-cavernosus muscles are grasped in forceps near this point and cut so as to leave a muscle stump attached to the *corpus spongiosum*. The *corpus spongiosum* is then detached from the triangular ligament and from the urethra and the urethra is exposed at a point above that portion at which the staff is arrested. The strictured area is then laid open freely and the two lateral flaps excised, an ovoid fenestrum being left in the urethra. A rubber catheter, No. 22 (F), is inserted into the bladder and withdrawn through the urethra and the urethra repaired transversely. The *corpus spongiosum* is then sewn to the triangular ligament with fine catgut and the severed muscles brought together with a single suture and the skin flap replaced. The catheter is left *in situ* for 48 hours, when it is slowly withdrawn while a gentle stream of hot boracic solution is flowing through it. A new catheter is replaced for 24 hours. On the fourth day the patient is catheterized when the request is made. On the fifth day he voids his urine in the usual manner. A No. 24 (F) sound is passed on the tenth day and one of larger size a week later.

##### (206) Infections from the Renal Pelvis.

J. A. Magdon states that during recent years it has been generally conceded that in cases of renal infection the kidney is infected secondarily following a primary bacteræmia (*Journ. Amer. Med. Assoc.*, January 10, 1920). In some cases it seems that the kidney, previously infected either through the blood stream or by an ascending infection, may be the cause from which a bacteræmia results. Experiments have been conducted with reference to the following questions: (1) Can organisms pass from the pelvis of the kidney into the blood stream? (2) Are the conditions under which they pass at all analogous to the pathological status found clinically? (3) Are there clinical cases in which the kidney has acted as a focus of infection? Dogs were used in all the experiments. The animals were anesthetized with a constant ether tension. *Bacillus prodigiosus* was the organism used in the experiments, a series of which were made. It was found that this organism injected into the ureter under varying amounts of pressure reached the blood stream two or three hours afterwards. The author concludes that bacteria can pass from the kidney pelvis into the blood stream and that they may do this under conditions analogous to some of the pathological states found in man.

## British Medical Association News.

## SCIENTIFIC.

A meeting of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on May 5, 1920, Mr. G. A. Syme, the President, in the chair.

Dr. F. Blois Lawton, O.B.E., read a paper entitled "Some Considerations of Enteric Infection" (see page 523).

Dr. A. V. M. Anderson said that Dr. Lawton mentioned some very interesting points. Not the least interesting of these was the diminished prevalence of enteric infections both in civil practice and under war conditions. They had only to recollect the Boer War, in which enteric fever had accounted for more casualties than the bullets of the enemy, to realize what a controlling hold the medical services had held over this disease in the recent war and to appreciate what an important factor it was in maintaining the efficiency of the armies. Dr. Lawton had referred to the greatly diminished incidence of enteric fever among the civil population in recent years. He (Dr. Anderson) had seen records of the Alfred Hospital in which as many as 400 cases appeared in a year; 120 cases in medical wards at one time was within his own experience at the Alfred Hospital, whereas now 15 to 20 in a season was the usual number. His impressions agreed with Dr. Lawton's statement that enteric fever had been more than usually prevalent during very recent months. This access of enteric infection had occurred in spite of the fact that the sewerage system had been considerably extended. An increase in the incidence of an infection of this type naturally raised the question of the possibility of "carriers" being responsible—possibly military sufferers who had been overseas. "Carriers" were notoriously difficult to recognize and to manage and their control was complicated by the fact that bacteriological examinations might yield negative results on more than one occasion, only to be followed by positive findings at irregular periods. He was completely in accord with Dr. Lawton when he urged the provision of adequate means of bacteriological examination and control of possible "carriers" of typhoid and allied infections. Indeed, the Council of the Victorian Branch had frequently emphasized this necessity. He had knowledge of one outbreak which was traced to a "carrier" with an ulcer on the leg, originating in a typhoid periostitis. This individual had had enteric fever twelve years prior to the periostitis. It was really very difficult to know how to deal with typhoid carriers. Their proper control was largely a legislative problem and it had to be admitted that the control at present exercised was very inefficient.

Dr. Anderson drew attention to the part played by flies in conveying the infection of enteric fever. He related an experience at the Alfred Hospital some years ago. It was in the days of no sewerage and the practice at the time in the Alfred Hospital was to keep the typhoid fever patients in tents. Ten nurses were accommodated in a tent adjoining the typhoid tents and of these, eight nurses contracted typhoid fever. There were no other cases among the nurses in the Hospital at the time and it seemed most probable that flies from the neighbouring typhoid tents had contaminated the food of the affected nurses. Dr. Anderson remarked further that he had often been impressed with the very serious risk to which nurses attending patients suffering from enteric fever, were exposed. They should always be given very careful instruction regarding their hands and it was a question whether they should not be recommended to wear rubber gloves.

Referring to the leucopenia of typhoid fever, Dr. Anderson emphasized its importance, but observed that it was not infallible. It was a well-known teaching that a sharp rise in the total leucocytes of the blood was corroborative evidence of a suspected perforation. He had made some observations upon this point himself and had found that in a certain number of cases in which perforation had occurred, the rise in the leucocytes was not apparent.

There had been a time when two and a quarter litres of milk and half a litre of beef-tea *per diem* was the ordinary dietary allowed a patient suffering from enteric fever. The more liberal diet scale now in use he was able to approve from his own experience. The very limited diet formerly

in vogue was based, in part at least, on the fear of precipitating a perforation of the bowel by giving a more generous diet, but it might be doubted whether the heavy curds from milk would not be just as prone to lead to a perforation as the intestinal content after farinaceous foods.

In some remarks upon treatment, Dr. Anderson laid stress on the necessity to render the urine antiseptic. Horton Smith had found that 20% of convalescent enteric patients manifested a typhoid bacilluria and had claimed that this could always be cleared up with hexamine. Later observers had not obtained such uniformly good results with hexamine, even when the doses were increased to 0.5 gm. three times a day for four weeks after defervescence.

Dr. Anderson commented on the predilection of typhoid bacilli for the gall bladder and on the fact that the bacilli had been recovered from biliary calculi.

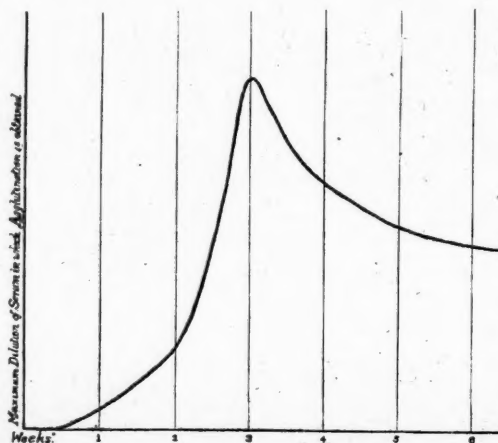
In the matter of treatment, it could not be said that there had been any real advance. The bath, once so much favoured, was now not so much used. Lieberman had claimed that he had reduced the mortality among his patients from 15% to 5% by means of the graduated bath and quinine. The drug had been exhibited in doses of 3 to 3.6 gm. daily; the observer quoted had stated that if he were compelled to abandon one of these measures it would be the bath rather than the quinine. Dr. Anderson could speak from a large experience of quinine; he confessed to a disinclination to the routine use of quinine in the dose stated.

In conclusion, Dr. Anderson emphasized the importance of early recognition of the disease in order that prophylactic measures might at once be instituted. He complimented Dr. Lawton upon the manner in which he had introduced the subject for discussion.

Dr. S. W. Patterson, after expressing his thanks to Dr. Lawton for his excellent paper, remarked that the enterica experiences of the South African war had so impressed the War Council that special precautions against these infections had been adopted from the very outset of the recent war. Segregation, isolation and observation of enterica patients had been made most stringent by the authorities and thus unique opportunities had been given for the verification of the results of vaccination and of modern methods of diagnosis.

Dr. Patterson laid stress on the presence of bacilli in the circulating blood from the outset of the disease and on the existence of a bacillæmia even before there was much rise of temperature. During the first week, typhoid bacilli could be recovered by hæmo-culture in 90% of cases. The percentage of successful results in blood culture rapidly diminished after the first week, but as late as the third or fourth week, diagnosis had been made by hæmo-culture in 50% of cases in the military laboratories.

The next means of diagnosis to hand was based on the immunity response on the part of the patient, *e.g.*, the agglutination reaction. He wished to draw attention to the results of consecutive determinations of the agglutination titre of the serum.



Agglutinating substances appeared early in the disease, increased rapidly during the third week, attaining a maximum between the eighteenth to twenty-second day and then gradually declined. In subjects inoculated against enteric fever, the shape of the curve was the same, but commenced from a higher base line.

In other febrile conditions occurring in inoculated patients, and in diseases like milary tuberculosis, agglutinating substances were found in the blood, causing variations in the agglutination titre of the serum, but successive determinations would not be found to conform with the curve shown. The diagnosis could be based on the shape of the curve if three determinations were made during the febrile period. A third method of establishing the exact nature of the infection in a suspected enterica was bacteriological examination of the excreta. This was a procedure of importance not only at the time of actual illness, but also in and after convalescence. Many patients continued to excrete typhoid bacilli for an indefinite period after convalescence.

If he might recapitulate, there were: (i.) hæmo-culture, (ii.) consecutive agglutination tests and (iii.) examination of the stools and urine, all measures of value in elucidating the precise infection in any individual case.

Dr. Patterson referred to recent discussions on the importance of co-operation between the laboratory and the clinic and observed that the enterica group of infections provided opportunity for the clinician to help the pathologist. They had formerly learned from the text-books to associate diarrhoea with typhoid fever, but in Australia they met constipation in typhoid fever very much more frequently than diarrhoea. Was it possible that they had to deal with an infecting organism of a type different from that which prevailed in England and America? In England *Bacillus typhosus* had been the organism most commonly implicated, with *B. paratyphosus B* next in order of frequency, whereas in India *B. paratyphosus A* was encountered in the largest number of infections. The arrival of the Indian troops in France in 1915 was followed by a sharp increase in the number of *B. paratyphoid A* findings. Clinicians, by accurately recording their observations, could furnish valuable assistance in the correlation of clinical observations with bacteriological findings and thereby advance the differentiation of the various infections grouped under the term enterica.

Dr. Patterson commented on the fact that *B. paratyphosus B* closely resembled the food-poisoning bacilli, though it could be distinguished from them by serological means. He remarked further that it would be interesting to trace the exact organism present in abortive enteric cases and in cases with diarrhoea. It might be found to be *B. paratyphosus B* or an allied organism.

In the next place, pure agglutination results were not always obtained. For example, the serum of a given patient might agglutinate *B. typhosus* in a dilution of 1:1,000 and, at the same time, agglutinate *B. paratyphosus A* or *B* in dilution of 1:360. In such a case (i.) was there a double infection, or (ii.) was it that the patient was really infected with *B. typhosus*, and the presence of group agglutinins determined the clumping of the paratyphus A or B bacilli as the case might be, or (iii.) was the actual infecting agent in such an instance as he had quoted *B. paratyphosus B*, which frequently gave a low agglutination titre, and the reaction to *B. typhosus* dependent on a group agglutinin?

Careful work on group agglutination was necessary in which the examination of the agglutinating reactions of the sera should be controlled by the recovery of the infecting organism, wherever possible. Such work was not of academic interest only, but must form the basis for any rational specific treatment with sera or vaccines.

Dr. R. J. Bull said that in his opinion the whole question of prophylaxis against enteric fever was bound up in those of proper water supply, proper food supply and effective sanitation. He had been keenly interested in the various aspects of enteric fever for a number of years and had taken a growing interest in the "carrier" problem. In connexion with "carriers," perhaps it would not be out of place if he related two experiences of which he had first-hand knowledge. The first related to an outbreak of typhoid fever in the northern suburbs, some ten years previously. The outbreak embraced 120 cases altogether. Upon inquiry, all affected houses were found to have a common milk supply from a particular dairy in Pakenham. It was further dis-

covered that a woman working on this dairy had been the subject of enteric fever in Western Australia four years previously. The woman's stools were examined and typhoid bacilli were recovered. She also gave a positive Widal reaction. The incidence of typhoid fever in the affected area declined immediately on the closing of the dairy. Whether the infection was conveyed to the milk through the medium of flies, or by the woman's soiled fingers, it was very difficult to say, but this outbreak had occurred in a district in which sanitation and water supply were good. With reference to the Widal reaction, Dr. Bull considered that its presence was a reliable guide in the detection of a "carrier," but too much significance should not be attached to its absence.

The second outbreak which he wished to describe briefly, occurred in the township of Bright, about fifteen years before. Sporadic cases of enteric fever had occurred in Bright from year to year and a certain number of tourists who had passed through the town, contracted the disease. The local medical practitioner, Dr. Kidd, for a long time suspected a certain woman as the disseminator of infection. This woman kept a small dairy, milked her own cows, and was employed as waitress in the hotel. Eventually she died of malignant disease, at the age of 76, and Dr. Kidd secured the gall bladder. It was forwarded to him (Dr. Bull) intact. He had experienced no difficulty in obtaining abundant colonies, which, upon investigation, were found to be those of *B. typhosus*. Several of the immediate relatives of the deceased woman had contracted enteric fever, as had others to whom she supplied milk. She herself had had a mild attack 15 years prior to the occurrence of the main outbreak in the Bright series of cases. For a period of three years she had remained apparently non-infective, but afterwards became yearly more infective. In all, 19 infections were traced to this woman, of which four were fatal. Perhaps the most striking examples of her infectivity were furnished by a man and his wife, who had one meal at the hotel in passing through Bright. They were waited upon by the woman who was the central figure of this outbreak. After the regulation period both developed enteric fever. Details of this "carrier" were published in *The Australian Medical Journal* in 1912.

Dr. Bull remarked that incidents such as he had related, served to emphasize the importance deservedly attached to the "carrier," who was more than ever a menace when engaged in handling milk or food. There had recently been appointed a new Health Commission. It was to be hoped that in the administration of the new *Health Act*, a more stringent supervision over "carriers" would be maintained, combined with more energetic measures for their detection. Under the old *Health Act* the onus of detection and control of typhoid "carriers" was on the local municipal health officer, who was often in a very difficult position, as it was only in recent years that the Public Health Department had made provision for the bacteriological examination of stools at the University. It seemed to him that no person should be allowed to handle milk until at least the blood had been examined. Early in the course of the war the examination of about one thousand stools and samples of urine of returned convalescent soldiers had been undertaken at the University Bacteriological Laboratory for the detection of the presence of organisms of the enterica group. In that series they had not obtained any instances of *B. paratyphosus* infection, but had recovered *B. typhosus* in a few cases. On the whole, he had not met with many instances of illness due to *B. paratyphosus A* or *B*. He had now in the laboratory several cultures of *B. typhosus*, the sources of which were the cerebro-spinal fluids of persons with acute meningitis.

Dr. Bull narrated an interesting experience with the Widal reaction. On one occasion he had been asked to examine a number of samples of blood collected by Dr. T. F. Ryan during a small epidemic at Nhili. This epidemic had its own peculiar features, in that in all the patients affected, the illness commenced with a rigor, pyuria supervened and was followed by the usual typhoid course. The serum from one of these samples of blood, within a few minutes of it being mixed with the typhoid suspension, caused a dramatic and complete lysis of the typhoid bacilli. He had ventured, at the time, to predict a short course for this particular patient. As events transpired, the crisis occurred abruptly within a few days.

Dr. Bull expressed himself as firmly of the opinion that



a great deal of enteric fever in rural districts was due to the very insanitary type of latrine in use in many country districts. The common type of pan, with its accompaniments of evil smell and numerous flies, was most objectionable and there was need for a great improvement in the system.

In some remarks he was about to make relative to prophylactic typhoid inoculation, Dr. Bull expressly asked that he be not misunderstood regarding the value of extensive and compulsory inoculation of troops in time of war. He did not question the incalculable benefit accruing on anti-typhoid inoculation in the Army, but, nevertheless, he thought that there was a danger of over-estimating its value in time of peace among the civil population. He thought the advisability of extended and compulsory inoculation under the latter conditions was questionable, even if it were practicable. Universal inoculation would tend to allay suspicions in country districts, with a consequent relaxation of vigilance and loss of sight of the importance of installing proper sanitary systems. There might result a smaller number of cases of the disease, of anomalous type, likely to be unrecognized. The patient would probably become "carriers" in the end.

As illustrating what could be accomplished by hygienic measures, Dr. Bull quoted the case of the town of Harrismith, which was the centre of a virulent outbreak of enteric fever during the Boer War. At that time anti-typhoid inoculation was only in its infancy and the medical officer at Harrismith made war on flies. The vigilance against flies was maintained in the following season, when, although enteric fever was prevalent elsewhere, there were no indigenous cases in Harrismith.

With reference to therapeutic inoculations, the speaker stated that he had been very well impressed with the cases he had seen in which they had been employed. Several had come under his immediate notice, and stock typhoid vaccine, in doses of 50, 100 and 200 millions, had been used at five to seven day intervals.

Dr. Bull concluded by expressing his appreciation of Dr. Lawton's paper and the interesting discussion it had evoked.

Dr. H. Hume Turnbull said that the mention by Dr. Bull of several cases in which the typhoid bacillus had been recovered from the cerebro-spinal fluid, recalled to him the case of a patient with enteric fever in Egypt, in whom the onset was very acute and of a distinctly meningeal character. He had noted in Egypt that the really acute cases of enterica were almost always due to the *B. typhosus* rather than *B. paratyphosus* and occurred chiefly in soldiers who had escaped inoculation. The Gallipoli typhoid had been very severe and there was no doubt but that, in the conditions obtaining upon the peninsula, it would have been very wide-spread in the absence of the protective inoculation.

Dr. N. Hamilton Fairley, O.B.E., joined the other speakers in congratulating Dr. Lawton on his paper on enterica infections and especially on that section of it relating to prophylaxis. There were certain pathological aspects of typhoid and para-typhoid fevers that were worthy of consideration. Primarily, enterica infections were septicaemias and hæmo-cultures during the first few days of illness yielded positive results in over 90% of cases. Later, the micro-organisms became filtered into lymphoid tissue such as occurred in the spleen, the bone-marrow, the abdominal lymph glands, Peyer's patches and the solitary follicles of the small intestine. *B. typhosus* affected mainly the small intestine, but *B. paratyphosus* A and B not infrequently involved the large bowel, producing ulceration. The parenchyma of the organs showed cloudy swelling and focal necrosis in the liver and elsewhere were common.

Dr. Fairley drew attention to the important and interesting nature of the cellulo-humoral response to infection. The total leucocyte count generally revealed a leucopenia, or at least an absence of leucocytosis, whereas the differential count showed a relative increase in the mono-nuclear elements, especially the lymphocytes. Typhoid bacilli appeared to exert a negative chemio-taxis on leucocytes. Microscopic sections of tissues infected with *B. typhosus* failed to reveal accumulations of polymorphonuclear cells in the vicinity of these bacilli.

Dr. Anderson had remarked on the frequent absence of leucocytosis supervening on perforation. This was not

difficult to understand when the effect of typhoid endotoxin on the bone-marrow was considered. In the bone-marrow in enteric fever, there was a decrease in granulated myelocytes and polynuclear leucocytes, the response was lymphoid in type. Focal necroses of bone-marrow tissue were frequently seen. Owing to the depression of its myeloblastic function, the bone-marrow could not generate leucocytes like normal tissue. This explained both the liability to secondary infection in severe cases of enteric fever and the deficient cellular response when such infection had supervened. The toxins liberated by malignant tertian parasites affected the bone-marrow in a similar fashion. Malaria was associated with a leucopenia and the patients, especially in the early stages, were extremely liable to succumb to secondary infections. The humoral response to infection with enteric fever had been investigated in detail.

Dr. Fairley pointed out that there was some evidence of sensitization to typhoid protein in the various allergic reactions described, such as the cutaneous, the intra-cutaneous and the conjunctival tests. The complement fixation reaction was positive in the later stages of the disease. Observers were all agreed that the antigen employed should be polyvalent. The agglutination reactions, both in inoculated and uninoculated patients, had been dealt with in detail by Dr. Patterson. Multiple observations, at different periods, were certainly necessary in assessing the value of the agglutination reactions in inoculated patients.

Dr. Fairley expressed the belief, based on a series of observations made in Egypt, that inoculation also modified the intensity of the leucopenia and that lower total leucocyte counts were obtained in uninoculated than in inoculated subjects.

The differential diagnosis depended on the particular geographical location of the physician. In Egypt, malignant malaria frequently simulated the enterica infections closely and paratyphoid disease associated with rigors could often not be distinguished from malaria on purely clinical grounds; splenomegaly and leucopenia were common signs. Malignant malaria sometimes presented a prolonged, remittent or even a more or less continuous type of fever. Positive hæmo-culture, or the discovery of malignant tertian parasites in the blood films enabled a definite diagnosis to be made. An increase in the large mono-nuclear cells of over 15% and excess of urobilin in the urine were considered evidence in favour of malaria. Typhus fever was distinguished by the petechial rash, which appeared on the fourth day, the rapid pulse, mental hebetude and a positive Weil-Felix reaction. Relapsing fever was associated with a sudden onset, leucocytosis and presence of spirochaetes in the peripheral blood. Malta fever was distinguished by agglutination reactions against the *Micrococcus melitensis*.

In some remarks upon treatment, Dr. Fairley said that the initial septicaemia of enteric fever appeared to him to be an indication for the early introduction of bactericidal drugs intravenously. Dr. Anderson had referred to the urotropine treatment during convalescence and in the "carrier" period. This drug exerted a lethal influence on organisms in an acid urine and was of benefit in this connexion. The gall-bladder seemed to be a focus of infection in certain of these cases. However, as the reaction of the bile was alkaline, urotropine could not exert any bactericidal influence in that situation.

Dr. W. Dismore Upjohn, O.B.E., commented on Dr. Lawton's statement regarding the frequency of ulceration in the large intestine in para-typhoid infection. It had formerly been the teaching that the occurrence of ulcers in the large intestine in enteric fever was indicative of a mixed typhoid and colic infection. In a large number of *post mortem* examinations which he had had the opportunity of conducting and witnessing at Mudros, ulcers in the large intestine were frequently met in enterica cases. In all instances the infection was demonstrated as due to the para-typhoid bacillus. He could not recollect any examples, in this series, of *B. typhosus* infection showing ulceration in the large intestine.

Dr. Upjohn referred to a patient he had been asked to see quite recently. The diagnosis was given as enteric fever, with perforation and peritonitis. This patient had passed through a severe illness and the diarrhoeal features usually associated with para-typhoid fever had been prominent. At operation he had found the perforation in the

transverse colon and had therefore ventured the opinion that the illness was paratyphoid. His suspicions were subsequently confirmed, as the serological tests determined the presence of *B. paratyphosus B.*

Dr. Upjohn inquired whether any of those present had encountered ulcers in the large bowel in cases of infection by *B. typhosus*.

Dr. R. H. Fetherston related a further example of the rôle played by "carriers" in disseminating enteric fever. In his municipality, there had occurred nine cases of the disease on a certain milk round. The dairy was of excellent repute and served eight or nine rounds altogether; but it was only in the one circuit that the enteric cases occurred. On investigation, it was found that the driver on this particular round was a urinary "carrier."

A large number of patients convalescent from enteric fever, some 2,000 in all, had been sent back to Australia in the early part of the war, with orders that they were not to be returned to duty overseas until they had given at least three negative stool examinations, at intervals of one month. The practice at once broke down, as only in the larger States could the requisite bacteriological examinations be carried out. In the smaller States it was impossible to cope with the situation and no assistance could be procured. Dr. Bull had grappled with the task in Melbourne and had detected a few "carriers" by his examinations of the stools. It was found to be impossible to cure the "carriers" when they were discovered. What to do with them was a very difficult problem for the army medical authorities. Eventually the patients were discharged from the service with a notification to the respective health departments.

At a later period, Dr. Fetherston had referred this question of the "carrier" state after enteric infections to Lieutenant-Colonel C. J. Martin, C.M.G., at Mudros. Professor Martin expressed the opinion that examination of the stools only, to the neglect of the urine, was useless. He also stated that para-typhoid urinary "carriers," if not cured within three months, were nearly all incurable. They might remain free for months, only to become again infective, for some unknown reason.

In conclusion, Dr. Fetherston paid a glowing tribute to the work in the Australian Imperial Force laboratory at Mudros; wonderful work, inspired by the enthusiasm of Lieutenant-Colonel C. J. Martin, had been carried out under extremely adverse conditions.

With reference to large bowel ulceration in the paratyphoid infections, Dr. J. Ramsay Webb outlined a recent case in which he had performed appendicectomy and had found the mucous membrane of the appendix involved in extensive superficial ulceration. The patient did not pursue the usual favourable course after removal of the appendix, but went on with an indefinite illness which was subsequently shown to be caused by *Bacillus paratyphosus B* by serological tests.

Dr. L. S. Latham said that to him the important fact of a survey of the position regarding typhoid fever was the greatly diminished prevalence of the disease. This was undoubtedly due to the more advanced hygienic conscience of the civil population, combined with the improved sanitation effected by the extension of the sewerage system. In military camps, with their overcrowding and abundant facilities for food infections, inoculation must have played a large part in determining the very low incidence of enteric fever. He agreed with Dr. Bull that inoculation on a large scale was impracticable in peace time, but no one questioned its value in war time.

As clinicians, they were very much indebted to bacteriologists in the diagnosis of the enterica infections, but he felt that there was still a great deal to be desired in the matter of treatment. The utility of vaccine applied in the treatment of enteric fever could not be said to be established. The same indefinite position obtained during the influenza epidemic, when some patients seemed to be benefited by sera or vaccines and others did equally well without immuno-therapy. In clinical work it was difficult to draw sound conclusions on this point, because it was impossible to obtain experimental conditions.

Dr. Latham remarked that the question of diet was one of importance in the general treatment of enteric fever. He considered that a reliable guide to the appropriate

dietary in any individual case was the presence or absence of anorexia. If this symptom was pronounced, it was a reasonable conclusion that the digestive secretions were not able to deal with more than a minimum diet.

Dr. W. Spalding Laurie related his experience when, some 17 years previously, he had been called upon to treat over five hundred cases of enteric fever in Western Australia. Among the large number of patients, many were in a serious condition. As they had nowhere to go after leaving hospital except to lodging houses, he felt that he could not turn them out in an emaciated condition without any preparation. Influenced chiefly by this consideration, he fed the patients on a much more generous scale than was customary at the period. He was bound to say that the results were good. There had followed a great diminution in mortality and less delirium and very much less meteorism. Hemorrhages were more frequent than the general figure given in statistics, but the tendency to hemorrhage was a characteristic of the epidemic. He had formed the opinion that when there was no appetite, the infection was a severe one and that when there was no anorexia, it was safe to feed; indeed, he had fed every patient since.

In Western Australia, at the time of which he was speaking, there were no facilities for bacteriological diagnosis, but he had made a *post mortem* examination on every person who died. Among the autopsies, he met several instances in which the lesions were principally in the large bowel. In one of this type, he remembered particularly well that the patient had exhibited hemorrhagic spots and an enlarged spleen. Descriptions of para-typhoid were just beginning to appear at that time; he had wondered if some of these cases with large bowel ulceration were really paratyphoid.

Dr. Laurie stated that he had not seen an instance of perforation outside the small intestine. He concluded by asking what was the earliest age at which enteric fever might occur. He had recently had experience of three cases in one family, one of which, in a child aged 17 months, he had regarded at first as ileo-colitis.

In reply to Dr. Laurie, Dr. F. Kingsley Norris stated that he had collected the data afforded by the records of 120 cases of enteric fever at the Children's Hospital. In the series, there were three children under the age of three years. The age incidence rose abruptly to nine years, then dwindled. All three very young children did well.

Dr. Lawton, in reply, thanked the members of the Branch for the manner in which they had received and discussed his paper. He had hoped to provoke an interesting discussion and in that respect he had not been disappointed.

With reference to the leucocyte count, a leucopenia was the rule in enteric fever, but the total count was often around the normal in para-typhoid fever. Dr. Lawton emphasized the significance of a leucocyte count which was not raised in the presence of fever and the importance of a blood film in any pyrexia in order to appreciate the types of cells and the presence of parasites.

He agreed with Dr. Patterson that there should always be close co-operation between the clinician and the pathologist. Regarding inoculation, no one doubted its efficacy in the late war. In his opinion, sanitary measures alone would have failed. At the present time, many country places possessed very defective sanitation and in centres where cases of enteric recurred from year to year, inoculation should be adopted. As for military camps, the disciplinary authority vested in the medical services made it often much easier to improve the sanitary conditions of a camp than to effect similar improvements in some civil centres.

The cases quoted of meningeal manifestations in enteric fever served again to illustrate the value of a leucocyte count.

As Dr. Fairley had remarked, the confusion of enterica conditions with other febrile affections depended largely on geographical location, but the indications were that malaria would have to be considered in the future in Australia.

The undermentioned have been elected members of the Victorian Branch:—

James Vine Pearce, Esq., M.B., B.S., 1914 (Univ. Melb.), Echuca.



Harold Newton Zimmer, Esq., M.B., B.S., 1920 (Univ. Melb.), Kyneton.  
 Charles Evander Sutherland, Esq., M.B., B.S., 1920 (Univ. Melb.), Dandenong.  
 Miss Ruth Anderson, M.B., B.S., 1918 (Univ. Melb.), Trentham.

The clinical meeting of the New South Wales Branch at the Sydney Hospital, which was convened for June 11, 1920, and was cancelled on account of the visit to Sydney of His Royal Highness the Prince of Wales, will be held on that date.

## Medical Societies.

### OPHTHALMOLOGICAL SOCIETY OF NEW SOUTH WALES.

A meeting of the Ophthalmological Society of New South Wales was held at the Sydney Hospital on May 5, 1920, Dr. Guy Antill Pockley, Vice-President, in the chair.

Dr. F. J. Blaxland presented a patient and read the notes of her case. The patient was a married woman, aged 42 years. She had consulted Dr. Blaxland on April 23, 1920, on account of defective vision in the left eye and dulled vision in the right eye. On examination Dr. Blaxland had found that the left pupil was widely dilated and pinned down to the lens at its upper and outer part. There was a central opacity of the cornea. No abnormality was detected in the right eye. Under cocaine definite vitreous opacities were seen in the right eye. In the left eye it was noted that there were precipitates on Descemet's membrane. At the same time it was seen that there were peculiar opacities scattered regularly through the left lens. A centrally placed foreign body was detected. There was a mark of a tear in the capsule. At Dr. Pockley's suggestion a skiagram was taken and the foreign body was clearly seen in the picture. The vision of the right eye with + 0.75 D. 180° was  $\frac{1}{2}$ , and of the left eye with - 11 sph. was  $\frac{1}{60}$ . The patient stated that the left eye had been "bad" since childhood. There was no record of an injury to the eye.

Dr. Blaxland held that it was not incompatible with the condition found that a foreign body might have been in the eye in a woman aged 42 years since childhood. He and Dr. Pockley were of opinion that the opacities in the right eye had increased.

Dr. R. H. Jones held that the eye should be watched closely for a considerable time before operative interference was undertaken.

Dr. J. J. Kelly suggested that the patient's blood serum should be tested for a Wassermann reaction. The effect of specific treatment might be watched.

Dr. Guy Antill Pockley advised that another X-ray examination should be carried out for the purpose of localizing the foreign body.

Dr. Blaxland, in thanking the members for their suggestions, promised to bring the patient to the next meeting of the Society.

Dr. Guy Antill Pockley demonstrated two patients in whom he had performed a Krönlein operation. In the one case the operation was undertaken for the removal of a bullet from the orbit. The result had been very satisfactory. The patient had recovered normal vision.

The second patient was a little girl whom he had shown at the last meeting. There was a history of blindness in the right eye and marked proptosis. At the operation he had found a fibro-sarcoma of the optic nerve. He had removed it as far back as the optic foramen. The proptosis had become much reduced, but there was still some ptosis. This usually took many months to disappear.

Dr. E. A. D'Ombra read the notes of a case of displacement of a congenitally dislocated lens into the anterior chamber. The patient was an unmarried woman, aged 26 years. She had sought his aid two years previously with the complaint that she was unable to see as well with her right eye as formerly. On examination both lenses were found to be congenitally dislocated downwards and outwards. Opacities were forming in the right lens. He had seen the patient again two weeks before the time of the meeting, when there was great pain in and redness of the left eye. Examination revealed a nearly mature cataract

of the right lens. There was a general conjunctivitis in the left eye. The lens of the left eye was found in the anterior chamber. Vision was reduced to mere perception of light. The tension was not increased. The lens was clear. Eserine was instilled with the object of imprisoning the lens in the anterior chamber until extraction would be attempted. The eserine had no effect and as the pain and redness were increasing, atropine was ordered to relieve the symptoms. The pain subsided almost completely after three instillations and the conjunctivitis was clearing up. There had been no alteration in the intra-ocular tension as a result of either the eserine or the atropine. Dr. D'Ombra had therefore postponed the extraction. The patient was a very nervous, under-sized and thin woman. She had been making herself ill with nervous apprehension.

### THE HEALTH OF NEW SOUTH WALES.

The Director-General of Public Health of New South Wales issued his annual report for the year 1918 two months earlier than last year's report. The book is less bulky than its predecessors. It contains 146 pages, as compared with 280 pages of the 1917 report. There is a saving of 20 pages in the portions dealing with public health administration, the combined sanitary districts and the State hospitals and institutions, and a saving of 106 pages in the report of the Micro-biological Laboratory.

#### Public Health Legislation.

The Director-General again demands an amendment of the law to enable the Department to deal with dangerous infective diseases. He states that the necessity for such legislation was demonstrated during the recent influenza epidemic. The only bill dealing with public health matters which became an act during the year 1918, was that for the control of venereal diseases. Reference is made to the delay in applying this Act. It is stated that the cause of the delay was the increased amount of work imposed on general hospitals and other institutions resulting from the outbreak of influenza. As the report deals only with the year 1918, no further information concerning this matter is given.

#### Food Control.

The administration of the *Pure Food Act, 1908*, is carried out by the Chief Inspector with the assistance of metropolitan and county inspectors. During the year 1918 two of the metropolitan inspectors were on active service and the work was carried on by the remaining six metropolitan inspectors and the two county inspectors. The duties of these officers include the supervision of milk supply, the supervision of the manufacture and storage of food for sale and the inspection of food in bulk.

The number of samples of milk taken for analysis was 4,015. In addition, there were 5,997 samples supplied by the municipal inspectors. The Government Analyst records that he examined 10,021 samples of fresh milk. Of these samples, 715 were found to be adulterated. This represents 7.1%. Warnings were issued on 434 occasions, while prosecutions were undertaken in 281 instances. Fines and costs amounting to £1,282 8s. or £4 11s. 3d. per offender, were imposed. We have referred on numerous occasions to the futility of dealing with the question of adulterated milk in this half-hearted manner. To be effective, the punishment should be a deterrent one and measures should be taken to prevent a vendor found guilty of selling adulterated milk from repeating the offence.

Dr. Paton discusses the importance of rapid transport and delivery of milk. He does not express an opinion as to the advisability or otherwise of enforcing pasteurization, nor does he even refer to the possibility of keeping the milk chilled from the time it leaves the dairies to the time it reaches the customer. The Department opposed the introduction of a single delivery of milk on Sundays and holidays suggested by the Milk and Ice-Carters' Employees' Union. He wisely emphasizes the fact that a morning and afternoon delivery of milk is essential to the welfare of infants and young children. He directs attention also to the fact that many of the local authorities are apparently apathetic in regard to the milk supply; a large number of inspectors engaged by the municipal authorities did not take even one sample for analysis.

The list of foods other than milk examined under the same Act contains 49 items and the number of samples taken was



456. It appears that of the 53 samples of cordials, 30 were below standard. Prosecutions were instituted in 14 cases and fines and costs amounting to £24 14s. were imposed. This yields an average of £1 6s. per offender. Twenty-eight samples of fruit were seized; all were found below standard. The fruit was seized and vendors were warned. Fifteen samples of butter were analyzed and four of them were found to be below standard. A warning was issued in three instances, while the fourth vendor was fined £7 6s.. In addition to the foods tested, large quantities of various food-stuffs were seized and destroyed. For example, 442-tons of dates were sacrificed, 14,013 tins of cheese suffered the same fate, 393 bags and 350 tins of vegetables were dealt with and three tons and two hundred weights of flour. The list is a long one and the total amount of food is stupendous. The number of offenders is not given. The number of prosecutions is 47 and the total amount of fines and costs £314.

During the year 1918 5,785 premises were inspected. This number is slightly smaller than the corresponding number in the previous year. The inspection of premises in connexion with the storage of foodstuffs has developed rapidly since 1909 and more especially since 1912. The number of prosecutions in regard to the premises was 106 and in regard to general breaches of the Act and regulations 131. Lastly, 28 inspections of troopships were undertaken and 164 samples of food were taken for analysis. The information contained in the report of the Government Analyst is limited to the numerical statement of the frequency of adulteration. The nature of the defects and their significance from the public health point of view are not dealt with.

Closely related to the administration of the *Pure Food Act* is that of the *Dairies Supervision Act*. Dr. Paton shows that there has been a steady decline in the infantile death-rate since the introduction of this legislation in 1886. In that year the rate was 128 per 1,000 deaths. In 1918 it was 59.8. He attributes this extraordinary improvement in the course of 32 years primarily to the provisions of the *Dairies Supervision Act*.

(To be Continued.)

## Obituary.

### WILLIAM HOUSTON LOW.

William Houston Low, whose death on April 25, 1920, was announced in our issue of May 8, 1920, was born in the year 1858 in Kilbirnie, Scotland. He received his education in Edinburgh and at the age of 25 he obtained the Diploma of the Royal College of Surgeons of Edinburgh. Soon after qualification he started practice at Preston in the north of England. In 1885 he travelled to Australia and settled in Ballarat, Victoria, where he practised for about seventeen years. At the end of this time he acted a *locum tenens* for several practitioners in various parts of Australia. In 1906 he determined to settle in practice again and selected Greta in New South Wales for the sphere of his activities. He was appointed medical officer to some of the collieries in the district. In 1911 he secured the position of Government Medical Officer, which he held for a period of nine years. For several years before his death he was in indifferent health, but, notwithstanding this, he continued to look after his patients. It was not until a fortnight before his death that he gave in to the inevitable. Colliery practice at best entails much hard work under conditions which are by no means congenial. It required much perseverance to keep up this arduous life while he was suffering severely in health. During the influenza epidemic in 1919 he bore the additional burden of the practice of a colleague who was himself a victim of the epidemic. William Houston Low married Miss Maud Payne, of Ballarat, and there is one son of the marriage, a boy aged ten years.

## Correspondence.

### DRUG IDIOSYNCRASY.

Sir: In the *British Medical Journal* of March 20, 1920, an article appears under the above heading.

As it is of interest in view of the wide difference in drug

influence owing to variety of temperament and drug purity, some comments on the subject may be of interest to your readers.

Regarding aspirin referred to I know of wonderful tolerance of large doses of these tabloids, 5 and 6 being taken by a young man for the relief of headache, but who is otherwise quite healthy. This large dose is taken at one time without any ill effects.

Sir W. Hale White remarks: "All are familiar with the profuse erythema which occasionally follows the administration of a soap enema." I must say I am not, and I have consulted a nurse in our private hospital who has been in practice for years and administered hundreds of soap and water enemas and she has never seen this condition follow it. Regarding barbitone (veronal) not included in the article referred to, I have some interesting comments to offer.

Five to ten grains<sup>1</sup> is the dose prescribed by Sir William Whittall in his book on "Pharmacy," and in his "Dictionary of Practice of Medicine" he surrounds this drug with many precautions and finally states he has discarded it as a dependable sedative. Recently I attended a woman, of 82 years of age, who developed acute senile mania with great and robust restlessness. I prescribed 5 grain doses to be given every three hours till quiet followed, but no result took place and her family became alarmed at the vigorous and sustained force of this old woman. At night her son came to me, saying something more must be done, as she was terrifying her friends and relatives and no one could rest. So I gave one dose of 26 grains<sup>2</sup>, at the same time telling her son if patient died he must not say I poisoned her. Well, the result was most satisfactory. The old woman slept a sound natural sleep for 36 hours and awoke well and has remained so since. During her sleep I examined her pulse and heart and there was no sign of failure and, strange to say, no cyanosis. In sharp contrast to this experience is that of a lady of 52 years who suffers from neuritis and insomnia. I have given her 10 grain doses of barbitone, which procedure procured good and refreshing sleep, but was followed by ataxia or rather movements similar to intoxication with alcohol which, however, soon passed off; but cyanosis was very marked in the lips and face. This drug is valueless if severe pain is present. In a case of acute and extremely painful sciatica, 10 grains of barbitone were given without any apparent effect, but the complaint quickly responded to morphine (gr.  $\frac{1}{4}$ )<sup>3</sup> followed by quinine and *liquor arsenicalls* in mixture.

Yours, etc.,

J. DE B. GRIFFITH.

Somerville, Victoria.  
Undated.

## Proceedings of the Australian Medical Boards.

### SOUTH AUSTRALIA.

The undermentioned have been registered under the provisions of the *Medical Act, 1880*, as duly qualified medical practitioners:—

Brian Herbert Swift, M.B., B.C., Cantab., 1916.

Eric Fitzgerald Harbison, M.B., B.S., Melb., 1918.

Julie Mary Hickford, M.B., B.S., Melb., 1918.

Walter Frederick Swanton Webb, L.R.C.P., and S., Edin.; L.R.F.P. and S., Glas., 1920.

The following additional qualification has been registered: Charles Duguid (M.B., Ch.B., Glas.), F.R.F.P. and S., Glas., 1919.

### TASMANIA.

The undermentioned have been registered since January, 1920, under the provisions of the *Medical Act, 1908*, as duly qualified medical practitioners:—

Norman Arthur Albiston, M.B., B.S., Melb., 1918, Hobart.

Janet Pierson Cooper, M.D., Boston Univ., 1917, Melbourne.

Frank Beauchamp Martin, M.B., B.S., Melb., 1909, F.R.C.S., Eng., 1914, Hobart.

<sup>1</sup> Our correspondent should discard Imperial dosage. The doses referred to are 0.32 to 0.64 grammes.

<sup>2</sup> 16.5 grammes.

<sup>3</sup> 0.01 gramme.

Arthur Leslie Giblin, L.R.C.S., L.R.C.P., Edin., L.F.P.S., Glasg., 1916, Hobart.  
 Frederick Grantley Morgan, M.B., B.S., Melb., 1916, New Norfolk.  
 William Henry Fitchett, M.B., B.S., Melb., 1918, New Norfolk.  
 John Claude Mosely Harper, M.B., B.S., Melb., 1915, Westbury.  
 David Gault, L.R.C.S., L.R.C.P., Edin., 1880, M.D., Durham, 1901, F.R.C.S., Edin., 1902, Swansea.  
 William James Olivey, M.R.C.S., L.R.C.P., Lond., 1891, Penguin.  
 Albert William Shugg, M.B., B.S., Melb., 1918, Great Lake.  
 Jack Rail Robertson, M.B., B.S., Melb., 1917, Deloraine.  
 Henry Croker Garde, L.R.C.S., L.R.C.P., Edin., 1878, F.R.C.S., Edin., 1886, L.M., K.Q.C.P.I., 1886, Hobart.  
 Alfred Roy Hudson, M.B., Sydney, 1917, Franklin.  
 William Keverall McIntyre, M.B., Ch.B., Univ. Edin., 1915, Launceston.

### Books Received.

DR. G. HERSCHELL'S TEXT-BOOK OF INDIGESTION. Revised and Rewritten by Adolphe Abrahams, O.B.E., M.D., M.R.C.P., Fourth Edition; 1920. London: Edward Arnold; Demy 8vo., pp. 228. Price, 10s. 6d. net.  
 MODERN ANÆSTHETICS, by J. Frederick W. Silk, M.D., Second Edition; 1920. London: Edward Arnold; Crown 8vo., pp. 191, illustrated by 37 figures. Price, 7s. 6d. net.  
 RADIOGRAPHY IN THE EXAMINATION OF THE LIVER, GALL BLADDER AND BILE DUCTS, by Robert Knox, M.D. (Reprinted from *Archives of Radiology and Electrotherapy*, July, August, September and October, 1919); 1920. London: William Heinemann. (Medical Books), Ltd.; Crown 4to., pp. 64, illustrated by 64 plates.  
 A MANUAL OF SURGERY (ROSE AND CARLESS) FOR STUDENTS AND PRACTITIONERS, by Albert Carless, C.B.E., M.B., M.S., F.R.C.S., Tenth Edition; 1920. London: Baillière, Tindall & Cox; Demy 8vo., pp. 1,574, with 33 plates and 614 figures in the text. Price, 30s. net.

### Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxiii.  
 Hospital for Sick Children, Brisbane: Resident Medical Officer.  
 Broken Hill and District Hospital: Senior and Junior House Surgeons.

### Medical Appointments.

#### IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
<b>VICTORIA.</b> (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges (other than the Grand United Order of Oddfellows and the Melbourne Tramways Mutual Benefit Society), Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
<b>QUEENSLAND.</b> (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital. Stannary Hills Hospital.

Branch.	APPOINTMENTS.
<b>SOUTH AUSTRALIA.</b> (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
<b>WESTERN AUSTRALIA.</b> (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
<b>NEW SOUTH WALES.</b> (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmaln United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
<b>NEW ZEALAND: WELLINGTON DIVISION.</b> (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

### Diary for the Month.

June 8.—Tas. Branch, B.M.A..  
 June 8.—N.S.W. Branch, B.M.A., Ethics Committee.  
 June 10.—Vic. Branch, B.M.A., Council.  
 June 10.—Q. Branch, B.M.A., Council.  
 June 11.—N.S.W. Branch, B.M.A., Clinical.  
 June 11.—S. Aust. Branch, Council.  
 June 15.—N.S.W. Branch, B.M.A., Executive and Finance Committee.  
 June 16.—W. Aust. Branch, B.M.A..  
 June 22.—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.  
 June 24.—S. Aust. Branch, B.M.A..  
 June 24.—Q. Branch, B.M.A., Council.  
 June 25.—N.S.W. Branch, B.M.A..  
 June 30.—Vic. Branch, B.M.A..  
 July 2.—Q. Branch, B.M.A..  
 July 6.—N.S.W. Branch, B.M.A., Council (Quarterly).  
 July 7.—Vic. Branch, B.M.A..  
 July 8.—Q. Branch, B.M.A., Council.  
 July 9.—N.S.W. Branch, Clinical.

#### EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.  
 Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.  
 All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney. (Telephone: City 2845.)  
 We are seeking copies of our issues of February 14 and 28, 1920. There has been an unusual demand on our stock, which is now depleted. Members who do not keep *The Medical Journal of Australia* for binding, are requested to send us their copies, on receipt of which the usual payment of the face value will be made.